



**Input your data. Output your website.**

**MONAHRQ® 5.0, Build 2**

## **Host User Guide**

November 2014



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## CHAPTER 1. MONAHRQ® OVERVIEW

**MONAHRQ—My Own Network, powered by AHRQ**—is innovative, free, website-generating software from the Agency for Healthcare Research and Quality (AHRQ). This desktop software enables any organization to create and host a website quickly and easily with understandable, evidence-based health care performance reports for providers, consumers, and others for use in improving health care quality.

Using MONAHRQ for public or private reporting supports AHRQ’s mission to improve the quality, accessibility, safety, efficiency, and cost transparency of health care for all Americans. Along with an organization’s own patient discharge data, MONAHRQ draws from local hospital inpatient and emergency department (ED) discharge data, evidence-based measures from the Centers for Medicare & Medicaid Services (CMS) Hospital Compare and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey measures, as well as pre-calculated AHRQ Quality Indicators™ (QIs) to produce health care reports.

AHRQ first conceived MONAHRQ in 2008 as a reporting tool for health care quality improvement. The project was born of two popular and widely used AHRQ data tools and products: the Healthcare Cost and Utilization Project (HCUP), the largest all-payer database in the United States with hospital discharge data; and the AHRQ QIs, a set of standardized, evidence-based health care quality measures that can be used with hospital inpatient discharge data. MONAHRQ has also been shaped by AHRQ’s extensive expertise in quality measurement and public reporting. Additional information on HCUP, AHRQ QIs, and the history of MONAHRQ can be found in [Appendix A](#).

### 1.1 Reports Available From MONAHRQ

MONAHRQ-generated websites include reports that provide important information on a variety of topics and reporting paths. There are two categories of reports: those intended for “Consumers,” and those intended for “All Audiences” (e.g., providers, policy leaders, and others). (Refer to [Section 1.3](#) for additional information about the relationship between report types and audiences and to assist in the decision-making process of defining your website.) Topics and reporting paths addressed include—

- Quality of hospital care—including comparison ratings by hospital and health topic, such as heart failure, and more detailed quality statistics for a wide range of measures
- Inpatient hospital and ED utilization—including detailed information about discharges, estimated costs by hospital, and rates for conditions and procedures
- Potentially avoidable hospital stays and cost savings—by county and health topic

- Discharge and cost rates—including hospital discharges, discharge rates, and estimated costs by county
- Hospital profile—a new MONAHRQ report that provides a hospital overview (e.g., location, number of beds, website address), quality ratings, and utilization data for each hospital

These reporting options or paths are described in detail in [Chapter 10](#).

## 1.2 Who Should Use MONAHRQ?

MONAHRQ can be used by any organization that wants to create and host a website for public or private reporting on health care quality and cost performance. Organizations that download MONAHRQ and generate reports to help improve health care are referred to in this Guide as “Host Users.”

Examples of Host Users include—

- State and local health agencies and public health departments
- Hospital associations, individual hospitals, and hospital systems
- Accountable Care Organizations (ACOs)
- Community alliances and coalitions, such as Chartered Value Exchanges (CVEs)
- Smaller, regionally focused health plans
- Data organizations such as Regional Health Improvement Organizations (RHIOs) and Quality Improvement Organizations (QIOs)

MONAHRQ-generated reports and websites are intended for a range of individuals. These “End Users” are generally interested in information about quality of care, cost, the affordability of health care, and how hospitals compare to each other.

Examples of End Users include—

- Consumers and patients
- Researchers and analysts
- Providers (hospitals, physician groups, nursing homes)
- Policymakers

The general public has a growing interest in information about health care options, including the quality and cost of care offered by different providers and other patients’ experiences with providers, to help inform their health care decisions.

## 1.3 Deciding What Type of Website to Create

Before getting started as a Host User, it is important to select the type of website you want to create: one designed to meet the information needs of consumers or patients, or one that provides reports for a wider range of End Users. This section will guide you through the options available to define the type of website you want to produce. Specifically, this section will help organizations that download MONAHRQ and generate reports decide what type of reporting website to create. Further, it will guide these organizations—called MONAHRQ Host Users—to select, configure, and customize the measures and reports necessary to build a website most suited to their target audience or End User. The two types of End User audiences for MONAHRQ are—

1. “Consumers” of health care, which includes the general public, patients, and caretakers; and
2. “All Audiences,” which includes the general public; providers (e.g., hospitals, physician groups,

nursing homes); researchers and analysts; health plan purchasers and employers; and policymakers.

MONAHRQ-generated websites can serve a multitude of needs. For example, consumers may access local information about providers to make more informed health care decisions—that is, to compare the quality of providers in their area. Providers can compare their own performance on quality measures to that of their competition or validate the data they submitted to reporting organizations. Researchers and policymakers might use reports to inform program initiatives and health care policies.

Because each End User's needs are unique, they will require different measures and reports to meet those needs. Evidence-based research shows that consumers understand and use reports differently than other audiences. As such, the reports displayed and made available for End Users through MONAHRQ websites are audience-specific. [Table 1](#) shows which reports are recommended and available by audience.

**Table 1: Report Type by Audience**

Report Type	Consumers	Providers, Health Plan Purchasers & Employers	Researchers and Analysts	Policymakers
<b>Hospital Quality<sup>a</sup></b>				
Ratings	●	●	●	●
Ratings—Detailed Tabular View		●	●	
Comparison	●	●	●	
Hospital Profile—Overview, and quality ratings (no utilization data)	●			
Hospital Profile—Overview, quality ratings, and utilization data		●	●	
<b>Avoidable Stays<sup>b</sup></b>				
Maps	●	●	●	●
By County		●	●	●
By County Profile		●	●	●
<b>Utilization<sup>c</sup></b>				
By County		●	●	●
By County—Stratified Report		●	●	●
By Custom Region		●	●	●
By Custom Region—Stratified Report		●	●	●
Inpatient Hospital Discharge		●	●	●
Inpatient Hospital Discharge—Detail		●	●	●
Emergency Department Treat-and-Release		●	●	●
Emergency Department Treat-and-Release—Stratified		●	●	●

<sup>a</sup> Comparison ratings by hospital and health topic (e.g., heart failure), and more detailed quality statistics for a wide range of measures

<sup>b</sup> Avoidable hospital stays and cost savings

<sup>c</sup> Discharges, estimated costs, and rates for conditions and procedures

### 1.3.1 Audience-Driven Decisions

Host Users must decide for which End User audience to develop a website before using MONAHRQ. This decision will provide a pathway for selecting what quality and cost data to display to End Users, and how to display such data. There are five key questions that will help Host Users make audience-driven decisions when building their websites:

1. Who is the intended audience or End User for the website?
2. Will the website be available publicly through the Internet or limited to those with a user name and password?
3. What data are available or obtainable for reporting?
4. What type(s) of reports are most useful for the End User?
5. What features can the website include to help End Users accomplish their goals on the website?

The following sections provide guidance based on your answers to these questions for each of four audiences: consumers; providers, health plan purchasers, and employers; researchers and analysts; and policymakers.

#### 1.3.2.1 Consumers

The consumer audience includes patients and the general public. Consumers will want to compare the quality and cost of providers, see how a particular provider performs, and assess the quality of care for a specific condition.

**1. Will the website be available publicly through the Internet or limited to those with a user name and password?**

Consider making the website public so that all potential users may access information that they can use to make decisions about and engage in their health care. A private site (that is, one that requires logging in with a user name and password) can be used, but this limits the site's accessibility to the general public.

**2. What data do you have available or could you obtain for reporting?**

The MONAHRQ download website provides Host Users with AHRQ Quality Indicators™, CMS Hospital Compare results, and Medicare Provider Charge Data–Inpatient. [Table 2](#) shows the types of data available and the measures that are relevant to consumers.

**Table 2: Data and Measures Relevant to Consumers for Use Within MONAHRQ**

Data	Types of Measures
AHRQ Quality Indicators™*	<ul style="list-style-type: none"><li>• Prevention Quality Indicators (PQIs)—Hospital admission rates for the conditions that could be prevented through good outpatient care</li><li>• Inpatient Quality Indicators (IQIs)—Mortality rates for conditions and procedures; hospital- and area-level procedure rates; procedure volume</li><li>• Patient Safety Indicators (PSIs)—Potential complications and errors resulting from a hospital admission for adults</li><li>• Pediatric Quality Indicators (PDIs)—Potential complications and errors resulting from a hospital admission for children and adolescents</li></ul>
CMS Hospital Compare Results*	<ul style="list-style-type: none"><li>• Timely and effective care</li><li>• Patient experience</li><li>• Use of medical imaging</li><li>• Readmissions, complications, and deaths</li></ul>
Medicare Provider Charge Data–Inpatient*	<ul style="list-style-type: none"><li>• Data include costs, charges, and payments for the top 25 Diagnosis Related Groups by volume</li></ul>

Data	Types of Measures
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\* Some data are publicly available and provided on the MONAHRQ download website.

### 3. What type(s) of reports are most useful for consumers?

Consider providing these reports on websites targeted to consumers:

- Hospital Quality Ratings
- Hospital Comparison Report
- Hospital Profile Report (without utilization data)
- Avoidable Stays Maps

These reports are likely to be the most useful for consumers. However, Host Users may consider adding other reports available through MONAHRQ to meet the goals of their consumers. These additional reports are available by default when Host Users select “All Audiences” as the reporting option rather than “Consumers.”

### 4. What features can the website include to help consumers accomplish their goals on the website?

- Limit the amount of detail in comparative reports that appear on the page, and provide or link to detail elsewhere on the website.
- Highlight differences in comparative scores. Sort scores and use word icons and graphics as visual cues to indicate which providers are scoring better or worse than others.
- Provide context on why quality data in general and each measure in particular are important and explain how a consumer can use the information.

#### 1.3.2.2 Providers, Health Plan Purchasers, and Employers

The provider audience includes hospitals and ambulatory care settings such as medical groups, physician offices, and nursing homes. Providers often want to compare their performance against other providers and to verify the accuracy of the internal data with that submitted for national public reporting. As payers, health plan purchasers and employers may want to compare the performance of providers to one another to aid their decisions for selecting health plans and coverage levels.

#### 1. Will the website be available publicly through the Internet or limited to those with a user name and password?

Providers would benefit from a report that allows them to easily compare how well their hospital is doing compared to other hospitals, but they may not want this information to be publicly available. Health plan purchasers and employers may not want to publicly share the performance of providers included in health plans they purchased or are considering purchasing. Host Users serving an audience with these purposes can make the website private so that they can control who accesses their site. The Host User makes a website private by supporting user names and passwords or another mechanism that limits access to the website.

#### 2. What data do you have available or could you obtain for reporting?

The MONAHRQ download website provides Host Users with AHRQ Quality Indicators™, CMS Hospital Compare results, and Medicare Provider Charge Data–Inpatient. You may also have other data that would be relevant. [Table 3](#) shows the types of data available and the measures relevant to providers, health plan purchasers, and employers.

**Table 3: Data and Measures Relevant to Providers, Health Plan Purchasers, and Employers for Use within MONAHRQ**

Data	Types of Measures
AHRQ Quality Indicators*	<ul style="list-style-type: none"> <li>Prevention Quality Indicators (PQIs)—Hospital admission rates for the conditions that could be prevented through good outpatient care</li> <li>Inpatient Quality Indicators (IQIs)—Mortality rates for conditions and procedures; hospital- and area-level procedure rates; procedure volume</li> <li>Patient Safety Indicators (PSIs)—Potential complications and errors resulting from a hospital admission for adults</li> <li>Pediatric Quality Indicators (PDIs)—Potential complications and errors resulting from a hospital admission for children and adolescents</li> </ul>
CMS Hospital Compare Results*	<ul style="list-style-type: none"> <li>Timely and effective care</li> <li>Patient experience</li> <li>Use of medical imaging</li> <li>Readmissions, complications, and deaths</li> </ul>
Medicare Provider Charge Data–Inpatient*	<ul style="list-style-type: none"> <li>Data include costs, charges, and payments for the top 25 Diagnosis Related Groups by volume</li> </ul>
Hospital Inpatient Discharge Data	<ul style="list-style-type: none"> <li>Organizations using MONAHRQ must supply these data. Data may include number and rate of specific conditions, procedures, or diagnoses</li> </ul>
Emergency Department Treat-and-Release Data	<ul style="list-style-type: none"> <li>Organizations using MONAHRQ must supply these data. Data may include number and rate of discharges, admissions, and diagnoses of patients seen in the Emergency Department</li> </ul>

\* Some data are publicly available and provided on the MONAHRQ download website.

**3. What type(s) of reports are most useful for providers, health plan purchasers, and employers?**

- Hospital Quality Ratings
- Hospital Quality Ratings—Detailed tabular view
- Hospital Comparison Report (MONAHRQ 5.0 supports comparisons of up to five hospitals)
- Hospital Profile Report (with utilization data)
- Inpatient Hospital Discharge (IP) Utilization Report
- IP Utilization Detail Report
- Emergency Department Treat-and Release (ED) Utilization Report
- ED Utilization—Stratified Report
- Avoidable Stays Maps
- Avoidable Stays by County Report
- Avoidable Stays by County Profile Report
- Utilization by County Report
- Utilization by County—Stratified Report
- Utilization by Custom Region
- Utilization by Custom Region—Stratified Report

**4. What features can the website include to help providers, health plan purchasers, and employers accomplish their goals on the website?**



- Show differences among providers' scores. Sort scores, compare the score(s) to a benchmark or average, and use word icons and graphics as visual cues to indicate which providers are scoring better or worse than others.
- Provide a means to access detailed scores for an individual provider; this is often done through a "drill-down"—a more detailed report derived from the comparative provider report.
- Link to information about the methodology and source of the data from the display of the data to instill trust in the report and the website.
- Provide context on why quality data in general and each measure in particular are important and explain how a provider can use the information.

### 1.3.2.3 Researchers and Analysts

Researchers and analysts from many different types of organizations may want to review detailed statistical data for journal publications, program planning, or quality improvement purposes.

#### 1. Will the website be available publicly through the Internet or limited to those with a user name and password?

The website could be either public or private, but should clearly indicate the audience for whom this information is targeted. Note: A private site allows better tracking of who is accessing your site, but it requires greater logistical management of the mechanism used to limit access to the website.

#### 2. What data do you have available or could you obtain for reporting?

The MONAHRQ download website provides Host Users with AHRQ Quality Indicators™, CMS Hospital Compare results, and Medicare Provider Charge Data–Inpatient. [Table 4](#) shows the types of data available and the measures relevant to researchers and analysts.

**Table 4: Data and Measures Relevant to Researchers and Analysts for Use Within MONAHRQ**

Data	Types of Measures
AHRQ Quality Indicators™*	<ul style="list-style-type: none"> <li>• Prevention Quality Indicators (PQIs)—Hospital admission rates for the conditions that could be prevented through good outpatient care</li> <li>• Inpatient Quality Indicators (PQIs)—Mortality rates for conditions and procedures; hospital- and area-level procedure rates; procedure volume</li> <li>• Patient Safety Indicators (PSIs)—Potential complications and errors resulting from a hospital admission for adults</li> <li>• Pediatric Quality Indicators (PDIs)—Potential complications and errors resulting from a hospital admission for children and adolescents</li> </ul>
CMS Hospital Compare Results*	<ul style="list-style-type: none"> <li>• Timely and effective care</li> <li>• Patient experience</li> <li>• Use of medical imaging</li> <li>• Readmissions, complications, and deaths</li> </ul>
Medicare Provider Charge Data–Inpatient*	<ul style="list-style-type: none"> <li>• Data include costs, charges, and payments for the top 25 Diagnosis Related Groups by volume</li> </ul>
Hospital Inpatient Discharge Data	<ul style="list-style-type: none"> <li>• Organizations using MONAHRQ must supply these data. Data may include number and rate of specific conditions, procedures, or diagnoses.</li> </ul>

Data	Types of Measures
Emergency Department Treat-and-Release Data	<ul style="list-style-type: none"> <li>Organizations using MONAHRQ must supply these data. Data may include number and rate of discharges, admissions, and diagnoses of patients seen in the Emergency Department.</li> </ul>

\* Some data are publicly available and provided on the MONAHRQ download website.

### 3. What type(s) of reports are most useful for researchers and analysts?

- Hospital Quality Ratings
- Hospital Quality Ratings—Detailed tabular view
- Hospital Comparison Report (MONAHRQ 5.0 supports comparisons of up to five hospitals)
- Hospital Profile Report (with utilization data)
- Inpatient Hospital Discharge (IP) Utilization Report
- IP Utilization Detail Report
- Emergency Department Treat-and Release (ED) Utilization Report
- ED Utilization—Stratified Report
- Avoidable Stays Maps
- Avoidable Stays by County Report
- Avoidable Stays by County Profile Report
- Utilization by County Report
- Utilization by County—Stratified Report
- Utilization by Custom Regions Report
- Utilization by Custom Regions—Stratified Report

### 4. What can you do to help researchers and analysts accomplish their goals on the website?

- Provide a clear pathway to detailed statistics at the individual organization level as well as across multiple organizations for comparison.
- Provide detailed data that informs the word icons. Researchers and analysts may want to look at the numerical scores for each organization or provider, so allowing access to that data is key. You can provide a link to more data on each provider or access to an entire dataset.
- Link to detailed information about the data source, measure, data collection timeframe, and any statistical adjustments made to the data to instill trust in the report and the website.

#### 1.3.2.4 Policymakers

Policymakers at the local, regional, and State level will benefit from population-level data that will likely be less relevant to consumers or providers. In addition, utilization data may be particularly useful for planning and budgeting.

#### 1. Will the website be available publicly through the Internet or limited to those with a user name and password?

The website could be either public or private, but should clearly indicate the audience for whom this information is targeted. Although population-level data that policymakers seek will not be actionable for other audiences, making it publicly available increases transparency. Note: A private site allows better tracking of who is accessing your site, but it requires greater logistical management of the mechanism used to limit access to the website.

## 2. What data do you have available or could you obtain for reporting?

The MONAHRQ download website provides Host Users with AHRQ Quality Indicators™, CMS Hospital Compare results, and Medicare Provider Charge Data–Inpatient. [Table 5](#) shows the types of data available and the measures relevant to policymakers.

**Table 5: Data and Measures Relevant to Policymakers for Use Within MONAHRQ**

Data	Types of Measures
AHRQ Quality Indicators™*	<ul style="list-style-type: none"><li>• Prevention Quality Indicators (PQIs)—Hospital admission rates for the conditions that could be prevented through good outpatient care</li><li>• Inpatient Quality Indicators (IQIs)—Mortality rates for conditions and procedures; hospital- and area-level procedure rates; procedure volume</li><li>• Patient Safety Indicators (PSIs)—Potential complications and errors resulting from a hospital admission for adults</li><li>• Pediatric Quality Indicators (PDIs)—Potential complications and errors resulting from a hospital admission for children and adolescents</li></ul>
CMS Hospital Compare Results*	<ul style="list-style-type: none"><li>• Timely and effective care</li><li>• Patient experience</li><li>• Use of medical imaging</li><li>• Readmissions, complications, and deaths</li></ul>
Medicare Provider Charge Data–Inpatient*	<ul style="list-style-type: none"><li>• Data include costs, charges, and payments for the top 25 Diagnosis Related Groups by volume</li></ul>
Hospital Inpatient Discharge Data	<ul style="list-style-type: none"><li>• Organizations using MONAHRQ must supply these data. Data may include number and rate of specific conditions, procedures, or diagnoses.</li></ul>
Emergency Department Treat-and-Release Data	<ul style="list-style-type: none"><li>• Organizations using MONAHRQ must supply these data. Data may include number and rate of discharges, admissions, and diagnoses of patients seen in the Emergency Department.</li></ul>

\* Some data are publicly available and provided on the MONAHRQ download website.

## 3. What type(s) of reports are most useful for policymakers?

- Hospital Quality Ratings
- Hospital Profile Report (with utilization data)
- Inpatient Hospital Discharge (IP) Utilization Report
- IP Utilization Detail Report
- Emergency Department Treat-and-Release (ED) Utilization Report
- ED Utilization—Stratified Report
- Avoidable Stays Maps
- Avoidable Stays by County Report
- Avoidable Stays by County Profile Report
- Utilization by County Report
- Utilization by County—Stratified Report
- Utilization by Custom Regions Report
- Utilization by Custom Regions—Stratified Report

## 4. What features can the website include to help End Users accomplish their goals on the website?

- Show overall regional or State-level scores and trends by geographic areas.

- Highlight differences in comparative scores. Sort scores and use word icons and graphics as visual cues to indicate which providers are scoring better or worse than others.
- Provide a means to access detailed scores; this is often done through a “drill-down”—a more detailed report deriving from the main report.
- Provide contextual information written for policymakers that provides an explanation of the importance of the measures and what they mean at the population level.

### **1.3.2 Summary**

The information presented in this section is intended to help you make decisions as you build your MONAHRQ-generated website. Once you have considered your responses to these questions, you will be ready to create your MONAHRQ website using the step-by-step instructions in the Host User Guide.

## **1.4 Using the Host User Guide and MONAHRQ®**

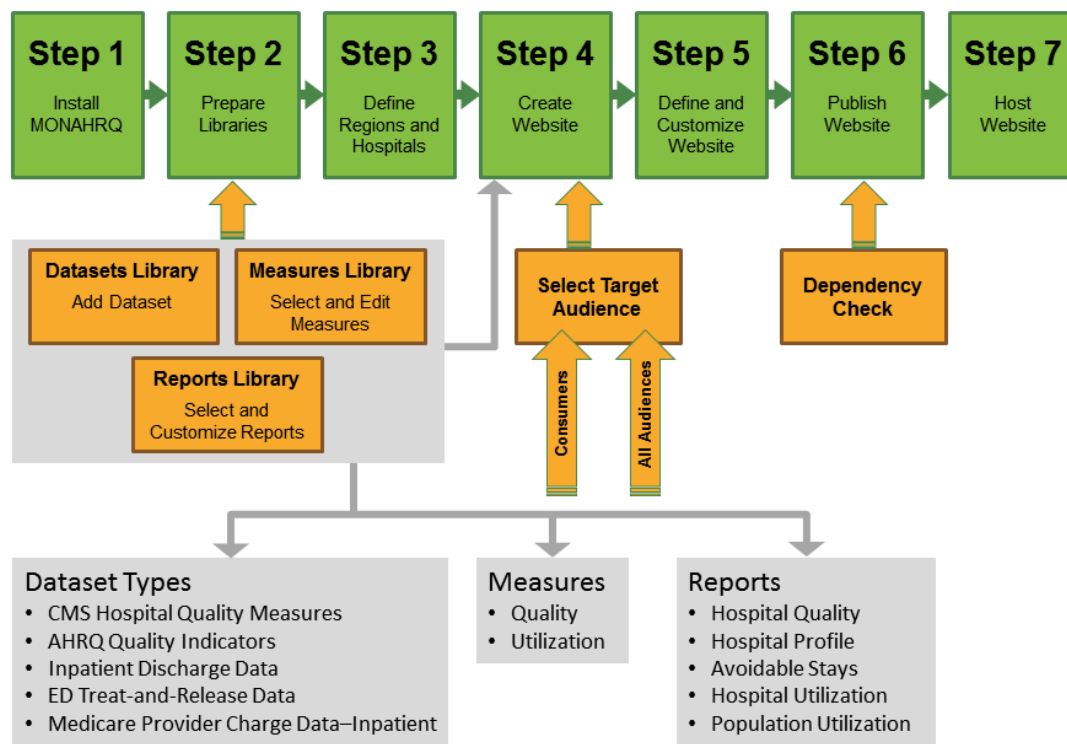
The Guide provides step-by-step instructions for Host Users about how to implement MONAHRQ. It includes an overview of the software requirements, installation process, and the datasets needed for various reporting paths; provides information about how to prepare and load local hospital data, CMS Hospital Compare measure results, and AHRQ QI data into MONAHRQ; and explains how to create and host a website with health care reports.

The Guide includes screenshots to illustrate key steps in the process. Links to other MONAHRQ materials such as the Quick Start Guide are available in [Appendix B](#).

### **1.4.1 Overview of Step-by-Step Instructions**

MONAHRQ provides a step-by-step process to guide organizations in loading their local data and creating a website. The process to generate a MONAHRQ website is depicted in [Figure 1](#) and described below. Use this section to get started on preparing your environment and generating your website.

**Figure 1: Process for Generating a MONAHRQ® Website**



**Step 1:** Prepare the computing environment and install MONAHRQ (See [Chapter 2](#) and [Appendices C–E](#) for more information.). To install MONAHRQ, you will need the following:

- A MONAHRQ-compatible Windows® operating system.
- The free Microsoft® .NET 4.0 Framework.
- Microsoft® SQL Server® or the free SQL Server 2008 R2 Express.

Once the computing environment is ready—

- Download and run the MONAHRQ installation package.
- Create a new MONAHRQ database or connect to an existing one using the Database Manager in MONAHRQ.

**Step 2:** Prepare libraries. In this step, you will prepare the following libraries:

- Datasets Library**—Load input data files into MONAHRQ. (See [Chapter 3](#) and [Appendix F](#)). Refer to [Section 1.3](#) to determine which health care data file and/or quality measure results are needed to include the corresponding reports in the MONAHRQ-generated website. Prepare the files with health care data and/or quality measure results to be imported into the MONAHRQ database. These may include one or more of the following:
  - Inpatient Discharge Data.** MONAHRQ allows Host Users to supply their own Inpatient Discharge Data. MONAHRQ helps map these data to the appropriate format to support a MONAHRQ website. (For more information about format requirements, see [Chapter 3](#) and [Appendix E](#).)
  - ED Treat-and-Release Data.** MONAHRQ allows Host Users to supply their own ED treat-and-release data. MONAHRQ helps map these data to the appropriate format to support a MONAHRQ website. (For more information about format requirements, see [Chapter 3](#) and [Appendix I](#).)

- **CMS Hospital Compare measures.** These include the HCAHPS patient satisfaction survey measures, which can be obtained from the MONAHRQ download website. CMS calculates the Hospital Compare measures and makes the results publicly available in downloadable format on the Hospital Compare website. The MONAHRQ project team obtains these downloadable database files, reformats them for import into MONAHRQ, and posts them on the MONAHRQ website. You can download these files from the MONAHRQ website at [http://monahrq.ahrq.gov/monahrq\\_data.shtml](http://monahrq.ahrq.gov/monahrq_data.shtml).
  - **AHRQ QIs.** MONAHRQ allows Host Users to calculate the AHRQ QIs, using inpatient discharge data obtained locally. AHRQ provides two tools to calculate the AHRQ QIs: the AHRQ QI software for Windows (WinQI) and the AHRQ QI software for SAS. (More information about calculating AHRQ QIs can be found at <http://qualityindicators.ahrq.gov>.) After calculating the AHRQ QIs, follow the instructions in this Guide to save the results in a format that can be loaded into MONAHRQ. This format is discussed in [Appendix J](#).
  - **Medicare Provider Charge Data (Inpatient).** These include hospital-specific charges for the more than 3,000 U.S. hospitals that receive Medicare Inpatient Prospective Payment System (IPPS) payments for the top 100 most frequently billed discharges. The latest data file can be downloaded from the MONAHRQ website under the “Resources” section. It is available in CSV format at <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/Inpatient.html>. The downloaded file can be uploaded directly into MONAHRQ without making any adjustments.
- ii. **Measures Library**—This library contains the measures supported by MONAHRQ and used for reporting. You can use out-of-the-box measure attributes provided by MONAHRQ or customize them to meet your local priorities for displaying measures. [Chapter 5](#) provides specific details on the Measures Library.
  - iii. **Reports Library**—This library contains the reports supported by MONAHRQ. You can use out-of-the-box report attributes such as display name, columns to be included in the reports, and others, or customize them to meet your local priorities for display. [Chapter 6](#) has more details.

**Step 3: Define regions and Hospitals**—Define the geographic location for your website by choosing Dartmouth Atlas Hospital Referral Regions (HRRs) or Hospital Service Area (HSA) or use a custom region. MONAHRQ comes preloaded with the hospitals extracted from the CMS Provider of Services (POS) file. You can use an intuitive, easy-to-use interface to enter a region and map your local hospitals manually or upload the configuration files. This removes the burden of entering data manually. The formats for these files are provided in [Appendix F](#) and [Section 4.3.5](#). Configuration files include—

- i. **Region definitions**
- ii. **Hospital definitions**

[Section 4.4](#) provides details on hospital definitions, including hospital categories. [Section 4.4.1](#) provides details on creating and organizing hospital geographic regions for datasets.

**Step 4: Create a website**—MONAHRQ 5.0 allows you to create and store multiple websites. Start creating a website by defining website names, a target audience, and a reporting time period. Depending on the target audience selected, MONAHRQ will suggest which reports to include for the website according to evidence-based best practices in public reporting. More details are provided in [Section 1.3](#). Next—

- i. **Select datasets**—Select the health care datasets or quality measure results from the Datasets Library. These will be included in the website for reporting.

- ii. **Choose and customize measure attributes**—MONAHRQ shows all measures as selected by default. Measures can be unselected and not reported in the website based on your local priorities.
- iii. **Select reports**—MONAHRQ makes suggestions regarding the reports to be included for a website based on the target audience selected. Choose out-of-the-box reports or customize reports based on your local priorities for reporting.

**Step 5:** Define and customize website—Define attributes such as the website title, a geographic description, logo, banner, and website folder. In addition, customize your website by either selecting a different website theme or changing the branding color, including fonts. Preview your website design before you publish it.

**Step 6:** Publish website—This is the final step in producing your website. Before publishing your website, run the “dependency check.” This function checks and reports on any missing pieces or inconsistencies that need to be fixed before the website is generated. Once the dependency check is done, MONAHRQ writes the website files to a directory specified by you.

**Step 7:** Host website—You can host your website by simply uploading the generated website to a web server. In this step you will:

- i. Transfer the MONAHRQ-generated website to a web server/hosting environment: Compress the website files, transfer them, and extract them, preserving the directory structure. To host a MONAHRQ-generated website, only a web server is needed. No database connection, application server, or other special hosting environment is required.
- ii. Customize the generated website further, as needed. As noted above, MONAHRQ allows the customization of logos, fonts, and colors used throughout the website. Please refer to [Chapter 7](#) for a description of the directory structure and files in the MONAHRQ-generated website and information about how to customize the site after it is generated.

You can update your MONAHRQ-generated websites as new data versions become available. You may use this feature to generate a new website for each data year available. An existing website can be used to create a new website and retain all of the settings, including the customization used in the existing website. Some users choose to refresh their existing websites as new CMS Hospital Compare measure results become available.

## 1.5 Technical Support

MONAHRQ brings with it a full range of technical assistance and advice. For questions or comments about using MONAHRQ, contact MONAHRQ Technical Assistance at [MONAHRQ@ahrq.gov](mailto:MONAHRQ@ahrq.gov).



## CHAPTER 2. INSTALLING MONAHRQ®

This chapter provides instructions for preparing the computing environment and installing MONAHRQ. Please note that the Quick Start Guide provides a distilled set of instructions for installing MONAHRQ, and can be a great resource when detailed instructions are not needed.

### 2.1 Preparing the Computing Environment

#### 2.1.1 Permissions

Before beginning the installation process, make sure your computer has the appropriate operating system and database permissions required to run the software. If a system administrator downloads the software on behalf of another user, the appropriate access privileges must be granted to the other user. However, administrator privileges or rights are required only during installation.

Please refer to [Appendix C](#) for information on verifying and setting operating system and database permissions.

#### 2.1.2 System Requirements

MONAHRQ is supported on the following operating systems:

- Windows® XP 32- and 64-bit
- Windows Server 2003 or higher 32- and 64-bit
- Windows 7 32- and 64-bit
- Windows 8 32- and 64-bit

To verify the version of the operating system on your computer, right-click on the **My Computer** icon on the desktop and select **Properties**. A window will appear that lists the version of the operating system in use (see [Appendix D](#).)

The approximate disk space requirements for MONAHRQ and associated components are as follows:

- Microsoft® .NET Framework 4.0—850 MB for 32-bit systems, 2 GB for 64-bit systems ([http://msdn.microsoft.com/en-us/library/8z6watww\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/8z6watww(v=vs.100).aspx))
- Microsoft® SQL Server® 2008 R2 Express—2 GB for 32-bit and 64-bit systems ([http://technet.microsoft.com/en-us/library/ms143506\(v=sql.100\).aspx#HardDiskSpace](http://technet.microsoft.com/en-us/library/ms143506(v=sql.100).aspx#HardDiskSpace))
- MONAHRQ application—350 MB
- MONAHRQ data—Requirements vary depending on the volume of data regarding hospital discharges and ED treat-and-release records. Approximately 100 MB is typical, but up to 4 GB may be required.
- MONAHRQ-generated web pages—Typically 500 MB but up to 4 GB may be required

Although MONAHRQ can run on most desktop computers, the following specifications are recommended:

- 2 GHz processor speed or higher
- 2 or more GB of memory



### 2.1.3 Required Supporting Software

To install MONAHRQ, the following software must be on your system:

- Microsoft .NET Framework 4.0.
- Microsoft SQL Server, 2005 or higher. If the Express Edition is used, Microsoft SQL Server Express Edition 2008 R2 is recommended due to its larger database size limit. This software may reside on a remote server.

This software can be downloaded from the MONAHRQ download website ([http://monahrq.ahrq.gov/monahrq\\_software.shtml](http://monahrq.ahrq.gov/monahrq_software.shtml)).

Before installing these tools, it is important to verify whether you have a 32-bit or 64-bit system. Please refer to [Appendix D](#) for instructions on how to verify this information.

#### 2.1.3.1 Microsoft .NET Installation

Microsoft .NET is a set of standard software libraries provided by Microsoft and used by MONAHRQ. MONAHRQ 5.0 requires Microsoft .NET Framework 4.0.

Please refer to [Appendix E](#) for instructions about how to determine whether Microsoft .NET Framework 4.0 is already installed on your system and for installation instructions, if needed.

#### 2.1.3.2 Microsoft SQL Server Installation

MONAHRQ is a single-user desktop application that requires a Microsoft SQL Server database to store data. Microsoft SQL Server has several editions, ranging from a free edition (Microsoft SQL Server Express Edition) to paid Enterprise Editions. Microsoft SQL Server can be installed on a PC or accessed over a network. Microsoft SQL Server Express Edition (the free edition) is the preferred version among many users. However, for SQL Server 2008 Express, the limit for the database size is 4 GB; for SQL Server 2008 R2 Express and SQL Server 2012 Express, the limit is 10 GB. If you expect your database size to be larger than or close to 10 GB, the paid Enterprise Edition of Microsoft SQL is recommended.

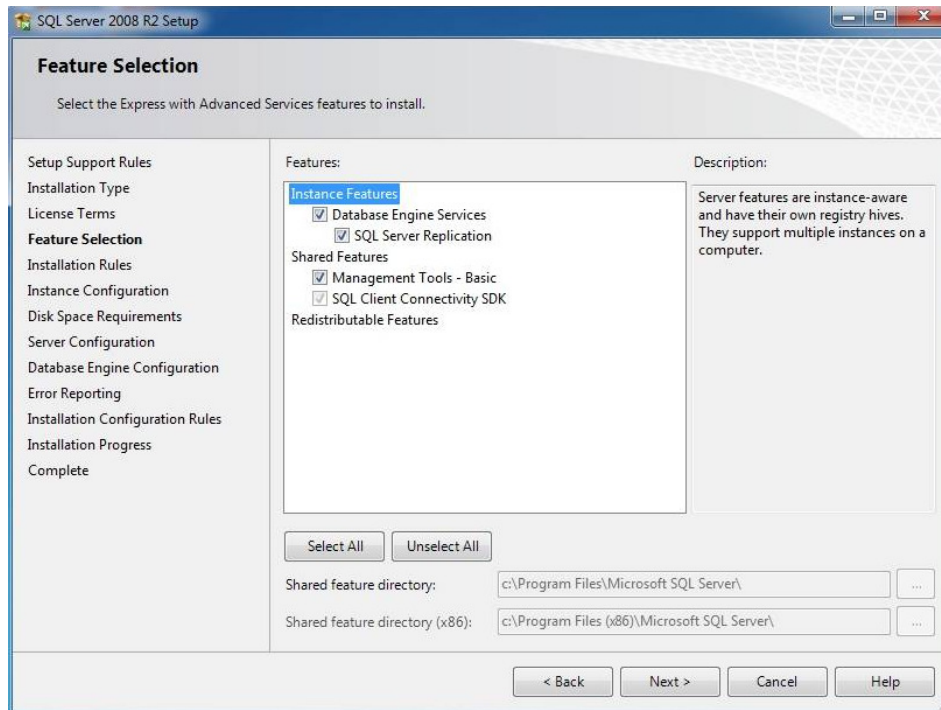
To create and use an SQL Server database on a desktop, download and install the software from the MONAHRQ download website at [http://monahrq.ahrq.gov/monahrq\\_software.shtml](http://monahrq.ahrq.gov/monahrq_software.shtml). To use an existing SQL Server database, the connection host name, login, and password are required to connect to that database.

When installing SQL Server, the installer will perform a “Setup Support Rules” check to identify any additional tools or updates that may be needed. You may be asked to install additional supporting software including a Windows Installer update or Windows PowerShell. These tools need to be installed before SQL Server can be installed.

Accept the default configuration settings provided by Microsoft, in addition to accepting the following options:

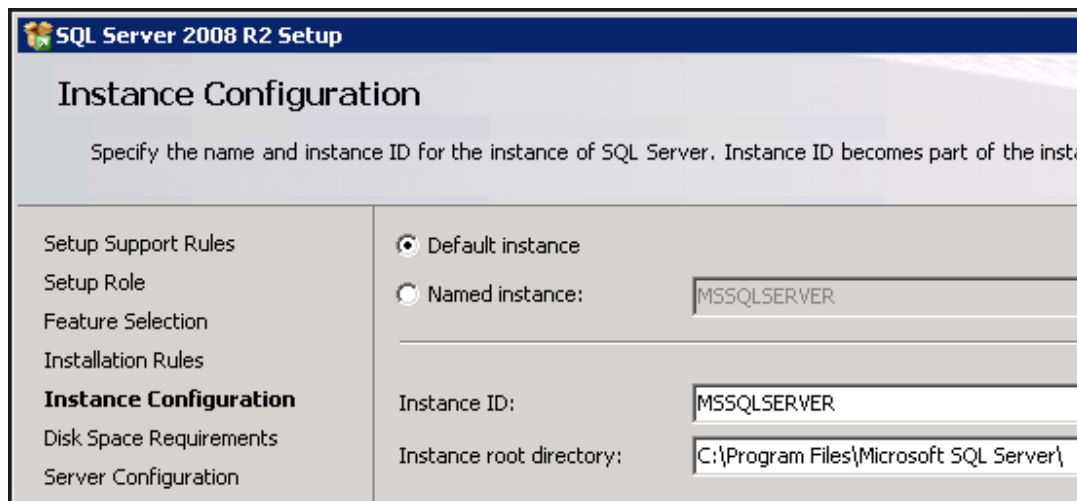
- **Feature Selection** ([Screenshot 1](#)). Install the Database Engine Services. The **Management Tools—Basic** feature is optional, but it is highly recommended because it provides tools for viewing and manipulating the databases. The other options are not used by MONAHRQ.

## Screenshot 1: Feature Selection



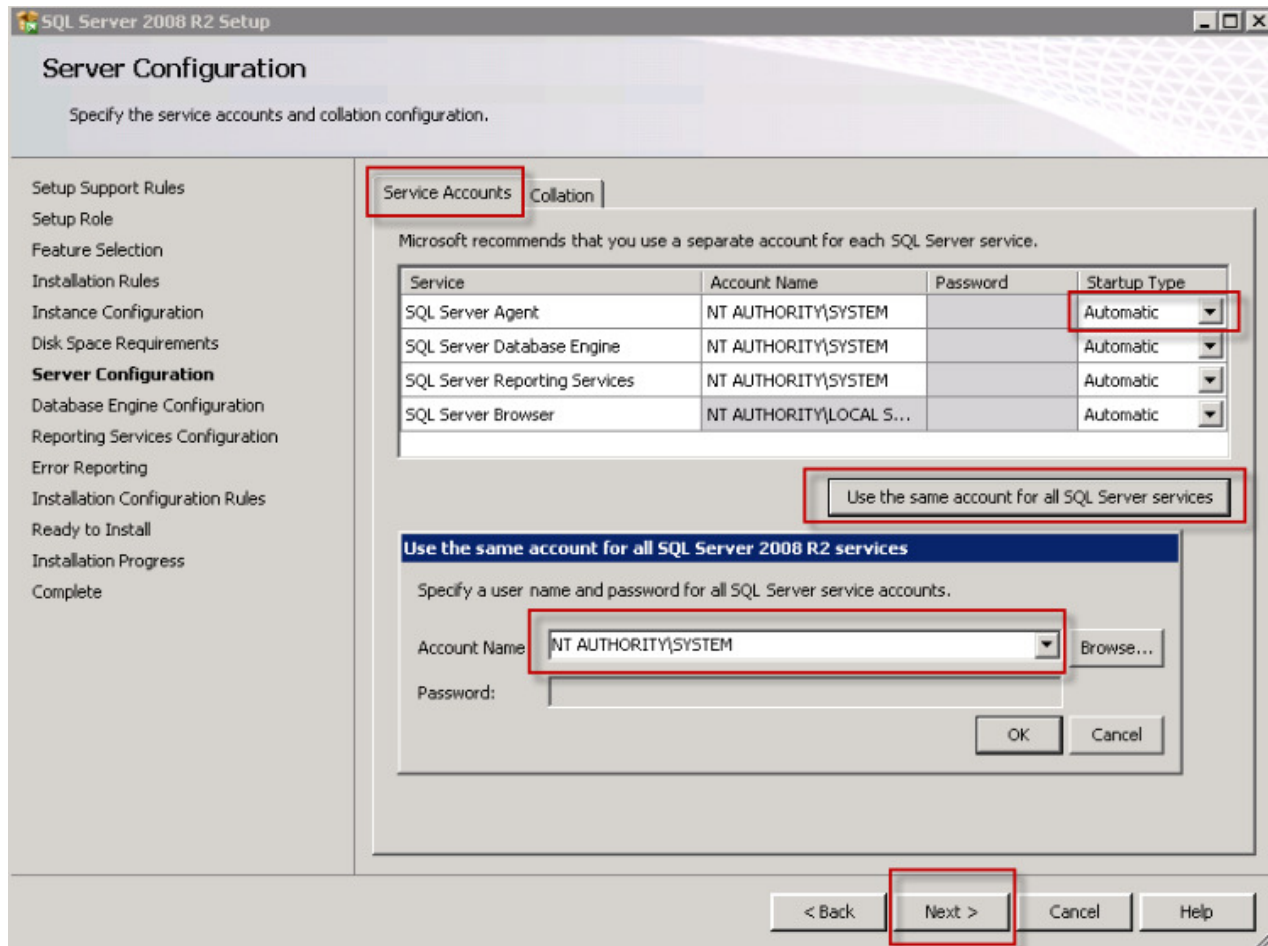
- **Instance Configuration** ([Screenshot 2](#)). As part of the installation for SQL Server 2008 R2, the wizard will ask you to choose between a default or a named instance. Select **Default Instance**. For example, for SQL Server Express, the default instance name is “SQLEXPRESS” and for SQL Server Enterprise, the default instance name is “MSSQLSERVER.”

## Screenshot 2: Instance Configuration



- **Server Configuration** ([Screenshot 3](#)). Under Service Accounts, go to SQL Server Database Engine, then Account Name, and select the Account Name with “System” in it.

### Screenshot 3: Server Configuration



Select the default settings for the following steps:

- **Database Engine Configuration**—Use Windows authentication mode if the user's administrative privilege is enabled on the computer. Click Next to continue to the Reporting Services Configuration.
- **Reporting Services Configuration**—Accept the default setting, which will set up Reporting Services. Click Next to continue on to the Error Reporting.
- **Error Reporting**—No action is needed here. Click Next to complete the wizard and begin the installation.

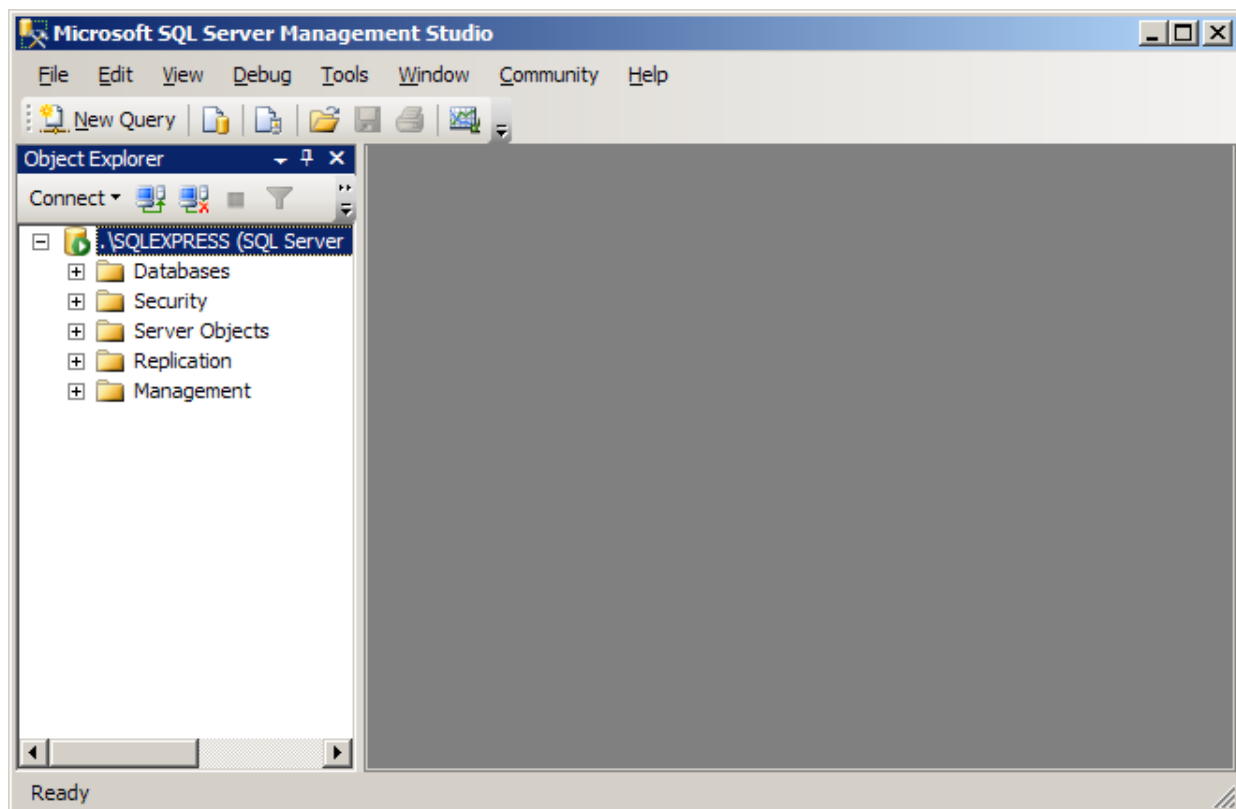
Once SQL Server is installed, which includes Management Tools, test the installation to determine whether you can connect to the database. To test the installation, go to Start, then All Programs, then Microsoft SQL Server 2008 R2 (or whichever version is downloaded), then SQL Server Management Studio. The Management Studio application will start. A login window will appear, as shown in [Screenshot 4](#).

#### Screenshot 4: SQL Server Management Login Window



Verify that authentication is set to Windows Authentication. Click Connect. The login window will disappear. The connection is successful if there are no error messages and the window as seen in [Screenshot 5](#) appears.

#### Screenshot 5: Verify Database Connection



### 2.1.4 **Optional Supporting Software**

The following software is not required to run MONAHRQ, but it may be necessary to calculate specific measures. (For more information on AHRQ QI measures, refer to [Appendix F.](#))

#### 2.1.4.1 **AHRQ Quality Indicators™ Software**

To load precalculated measure results for the AHRQ Quality Indicators (QIs) into MONAHRQ, use AHRQ QI software. Starting with MONAHRQ 4.0 and above, MONAHRQ is separated from AHRQ QI, and AHRQ QI software must be used separately. AHRQ provides two software tools to calculate AHRQ QIs and each will generate precalculated measures for use in MONAHRQ 5.0:

1. AHRQ QI software for Windows® (WinQI)
2. AHRQ QI software for SAS®

You can choose to use either software to calculate quality indicator results. However, WinQI provides an intuitive, easy-to-use interface for calculating quality indicator results. In addition to using AHRQ software for calculating quality indicator results, if you choose to generate estimated cost savings for potentially avoidable hospital stays, you must install WinQI before generating the website; the AHRQ QI software for SAS does not work for this feature. MONAHRQ uses information from the AHRQ QI database to calculate the cost savings. For all other purposes, MONAHRQ 5.0 runs separately from the AHRQ QI software.

The AHRQ QI software for SAS uses SAS (<http://www.sas.com>) to calculate quality indicator results. To load precalculated measure results using the AHRQ QI software for SAS, use **SAS Formatting Utilities for the AHRQ QIs**. Access and download these utilities from the MONAHRQ download website ([http://monahrq.ahrq.gov/monahrq\\_software.shtml](http://monahrq.ahrq.gov/monahrq_software.shtml)).

Refer to the AHRQ QI website for software and download information:

<http://qualityindicators.ahrq.gov/software/default.aspx>.

The following list shows AHRQ QI software compatibility with MONAHRQ:

- MONAHRQ 5.0 is compatible with AHRQ QI 4.5, AHRQ QI 4.4 or AHRQ QI 4.3a
- MONAHRQ 4.1 is compatible with AHRQ QI 4.5, AHRQ QI 4.4 or AHRQ QI 4.3a
- MONAHRQ 4.0.1 is compatible with AHRQ QI 4.4 or AHRQ QI 4.3a
- MONAHRQ 4.0 is compatible with AHRQ QI 4.4 or AHRQ QI 4.3a
- MONAHRQ 3.0 is compatible with AHRQ QI 4.3
- MONAHRQ 2.0 is compatible with AHRQ QI 4.2
- MONAHRQ 1.1 is compatible with AHRQ QI 4.2
- MONAHRQ 1.0 is compatible with AHRQ QI 4.2

[Appendix J](#) includes instructions for installing and running the AHRQ QI software.

## 2.2 **Uninstalling Previous Versions of MONAHRQ®**

The recommendation is to uninstall previous versions of MONAHRQ before installing MONAHRQ 5.0; however, this is not required. To uninstall previous versions of MONAHRQ—

1. From the Windows start menu, select **Control Panel**.
2. Select Add or Remove Programs.
3. In the list of applications that appears, select **MONAHRQ**.

4. Select **Remove**.
5. Close the window when the removal process is complete.

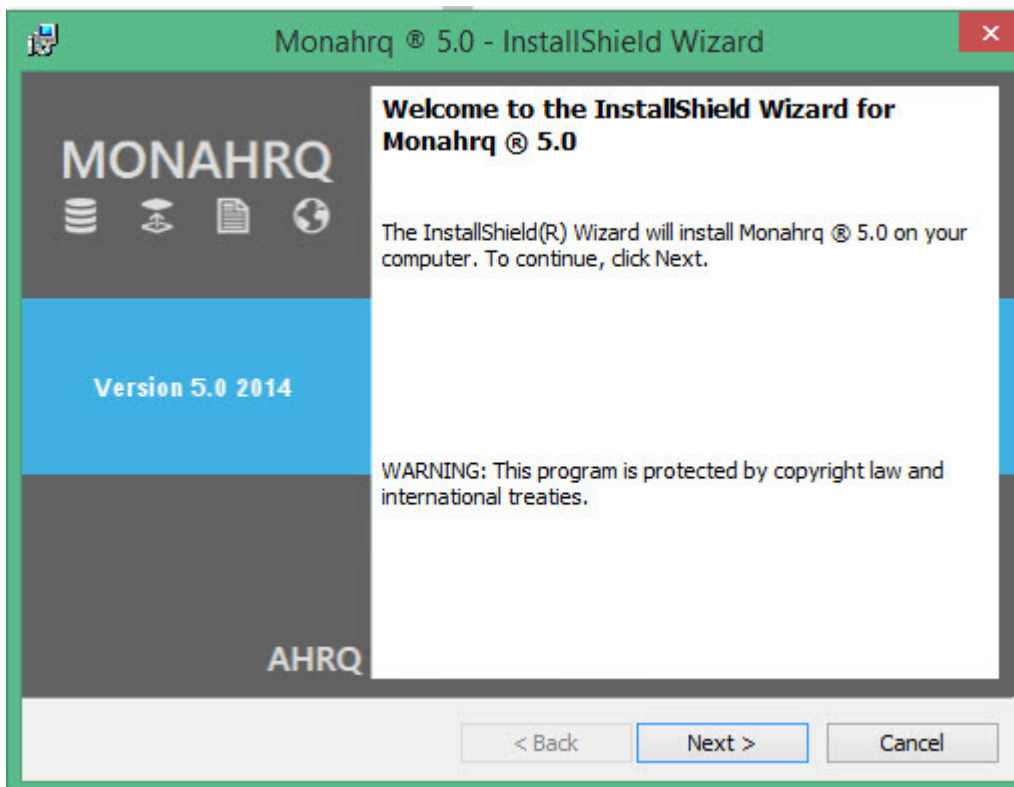
## 2.3 Installing MONAHRQ®

To install MONAHRQ, run the installation package from the MONAHRQ download website ([http://monahrq.ahrq.gov/monahrq\\_software.shtml](http://monahrq.ahrq.gov/monahrq_software.shtml)). When running the file, an install wizard will appear.

The install wizard will prompt you to **specify the directory** in which you would like MONAHRQ installed, as shown in [Screenshot 6](#). The default installation directory is C:\Program Files\AHRQ\MONAHRQ\.

Progress meters will show the progress of the setup process. A window will appear to indicate that the installation has completed successfully.

**Screenshot 6: Installation Folder**



MONAHRQ version 5.0 introduced a new installer and process. If you are an existing MONAHRQ 5.0 Host User, you will be prompted to upgrade to the latest version of MONAHRQ. If you are new to MONAHRQ 5.0 and higher, you will be prompted to complete the initial installation process as a first time Host User. After your first installation of MONAHRQ 5.0 or higher, you will be prompted to upgrade to the latest version in future installation processes.

## CHAPTER 3. OVERVIEW OF STANDARD DATA FILES

To generate health care reports, you must first load your data files into MONAHRQ. This chapter will provide information about which data and measures are needed for each reporting path. For more information, refer to [Appendix F](#), which provides an overview of each type of data as well as detailed instructions about how to prepare the data and measures to be loaded into MONAHRQ.

### 3.1 Data and Measures for MONAHRQ®

#### 3.1.1 Reporting Paths and Their Associated Data and Measures

MONAHRQ provides several reporting paths. Each path requires different data. You need to load only the data that will be used in the paths of interest. Generating a website only requires one dataset, and you can add datasets as you build your website. Data used in MONAHRQ include—

- Inpatient Discharge Data
- Emergency Department (ED) Treat-and Release Data
- CMS Hospital Compare Measures
- AHRQ Quality Indicators™
- Medicare Provider Charge Data: Inpatient
- Region Information file
- Hospital Information File

[Table 6](#) lists the MONAHRQ reporting paths and their required data. MONAHRQ allows you to import datasets to source the reporting paths and measures referenced in [Table 1](#). The Provider of Service (POS), Hospital Information, and Region Information files are embedded within MONAHRQ; therefore, you will not need to upload these base files.

**Table 6: Data and Measures for MONAHRQ Paths**

MONAHRQ Path	Data and Measures	Source of Data or Software To Generate Data
County Rates of Hospital Use	<ul style="list-style-type: none"><li>• Inpatient Discharge Data</li></ul>	<ul style="list-style-type: none"><li>• Host User's organization</li></ul>
Utilization—Inpatient	<ul style="list-style-type: none"><li>• Inpatient Discharge Data</li></ul>	<ul style="list-style-type: none"><li>• Host User's organization</li></ul>
Utilization—Emergency Department (ED)	<ul style="list-style-type: none"><li>• Combination of Inpatient Discharge Data and ED Treat-and-Release data</li></ul>	<ul style="list-style-type: none"><li>• Host User's organization</li></ul>
Hospital Quality	<ul style="list-style-type: none"><li>• CMS Hospital Compare measures and provider-level AHRQ QIs</li></ul>	<ul style="list-style-type: none"><li>• AHRQ QI software using data from the Host User's organization</li><li>• MONAHRQ download website</li></ul>
Avoidable Hospital Stays	<ul style="list-style-type: none"><li>• Area-level AHRQ QIs</li></ul>	<ul style="list-style-type: none"><li>• AHRQ QI software using data from the Host User's organization</li></ul>
Hospital Profile Report	<ul style="list-style-type: none"><li>• Medicare Provider Charge Data—Inpatient</li></ul>	<ul style="list-style-type: none"><li>• MONAHRQ download website</li></ul>



## CHAPTER 4. CONFIGURING YOUR MONAHRQ® WEBSITE

Prepared data and measures can now be loaded into the MONAHRQ database to create a website. This chapter describes the process of configuring a new MONAHRQ website using the Create a New Website wizard. It also includes information about the key features of the MONAHRQ Welcome screen, as well as choosing and defining datasets, importing and mapping data and measures, validating data, and managing hospital-level data.

### 4.1 Navigating the MONAHRQ® Welcome Screen

The Welcome screen is displayed the first time you use MONAHRQ to build a website. (Note: If you have already created a website, you will automatically be directed to the Current Website screen). The easy-to-navigate Welcome screen allows you to import new data, define measures, preview reports, and generate your new MONAHRQ website through the Create a New Website wizard and other available components. Below are the steps to provide SQL connection information to MOANHRQ:

**Step 1:** Click the MONAHRQ shortcut to open the MONAHRQ application. The SQL Server Connection window opens.

**Step 2:** Enter Server Name.

**Step 3:** Enter Database Name.

**Step 4:** Click the “CREATE” button if you are creating MONAHRQ database for the first time. If you want to connect to the existing database, click the “TEST” button.

**Step 5:** Optional: Use Integrated Security, User Name and Password.

**Step 6:** Click the “OK” button.

- **Website Wizard**—This wizard guides you through the five steps to create a MONAHRQ website. You can also view any websites you have already created (see [Section 4.2](#)).
- **Global Library Panel**—The Global Library located on the left side panel of the Welcome screen enables you to update and configure datasets, measures, reports, and websites at any time in the website creation and maintenance process. The library panel is composed of the following five core elements, which are required to generate health care performance reports:
  1. **Datasets**—The Datasets Library contains and displays all of the input files that you upload. MONAHRQ allows you to upload multiple input files for each dataset type.
  2. **Measures**—The Measures Library displays all of the available measures, grouped by topic and subtopic. You can select a measure to edit its attributes, such as friendly display name, benchmark data, etc.
  3. **Reports**—The Reports Library displays all of the available reports within MONAHRQ.
  4. **Websites**—The Websites Library displays all of the existing websites you have created. This screen is outlined in [Chapter 7](#).
  5. **Settings**—The settings feature includes the functional components that can be configured, including database settings, session log files, etc. (See [Chapter 8](#).)



- **Tutorials**—The Tutorial section contains learning materials and information related to the MONAHRQ website’s capabilities and practical uses of datasets, measures, and reporting.

### Screenshot 7: MONAHRQ Welcome Screen



## 4.2 Using the Website Wizard

The Website wizard will walk you through the five steps to create a MONAHRQ website after you have uploaded your datasets into the Datasets library.

**Step 1:** Click the “Create a New Website” button to launch the website definition page ([Screenshot 7](#)). The definition page will allow you to name your website project, define the reporting quarter and year, and add a brief description of the website ([Screenshot 8](#)).

## Screenshot 8: Website Wizard

**Step 2:** Establish a name for the website project and enter the selection in the “Name” field ([Screenshot 8](#)). The name entered will define the website project. It is not the name of your MONAHRQ-generated website. The name is limited to a maximum length of 200 characters.

**Step 3:** Define the website reporting period for the datasets used. The website reporting period reflects the reporting period of the source datasets. To define the reporting period for a specific quarter, select the period value in the “Reported Quarter” dropdown box. If reporting annually and not quarterly, change the dropdown value to “Blank.”

**Step 4:** Further define the reporting period by selecting a value in the single-select “Reported Year” dropdown box. The dropdown box is populated with a range of 10 years before and five years after the current year.

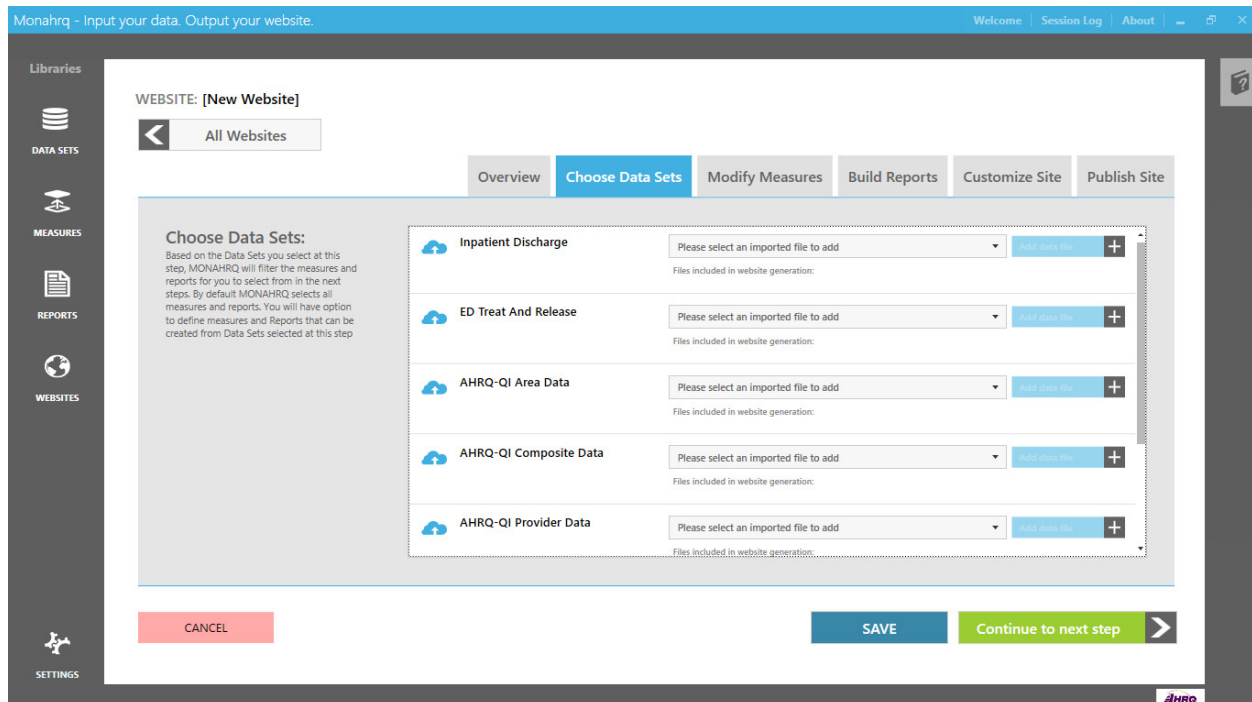
**Step 5:** Add optional details about your website in the “Description” field. The description will be a reference for you only and will not be displayed on the final website for the End User. This optional field allows up to 500 characters.

**Step 6:** Click the “Continue” button to proceed to the “Choose Datasets” step.

### 4.2.1 Choosing Datasets

After defining your website, use the Dataset wizard to select the Measures and Hospital data files to source the reporting paths for the specific website you are generating ([Screenshot 9](#)). If you are unable to import a data file from this screen, click the Datasets library action icon to access the Datasets library. You can import your data files from within this screen.

## Screenshot 9: Choosing Datasets

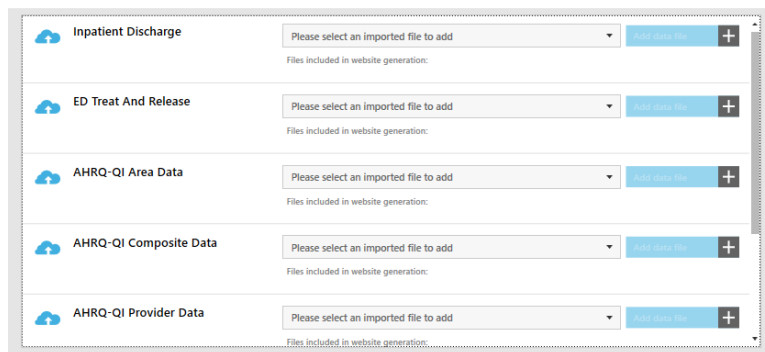


### 4.2.2 Importing and Managing Measures and Datasets

The Dataset wizard imports, maps, and manages all measures and datasets in the Websites Library. You can add, manage, or delete datasets at any time throughout the life of the website. Datasets may be added to source a specific reporting path or add a newer version of the dataset for the specific website you are generating

**Step 1:** On the “Choose Datasets” screen, select the dataset file type source from your Data Set Library (e.g., AHRQ QI Composite Data) (see [Screenshot 10](#)).

### Screenshot 10: Choose Datasets View



**Step 2:** If you have not imported Data Sets, access the Data Sets Library to import your files ([Screenshot 11](#)).

## Screenshot 11: Defining Datasets

Monahrq - Input your data. Output your website. Welcome | Session Log | About

Libraries

DATA SETS

MEASURES

REPORTS

WEBSITES

SETTINGS

**Inpatient Discharge**

Import Data | Data Mapping | Complete

Select data file | Processing File

Use the Browse button to locate the data file you want to import. It may be a text file of comma separated values (.csv), a MS Excel file (.xls or .xlsx), or a MS Access Database file (.mdb, or .accdb).

Enter Title: (Maximum length is 200 characters)

Inpatient Discharge File

Reported Quarter: 4th Quarter | Reported Year: 2012

Please browse for your input data file:

C:\Users\TEMP.PANTH.001\Desktop\MONAHRQ files\Inpatient\_Discharge\_Data.csv

BROWSE

☒ Does your file have a header row?

☒ Does your file use double-quotes to delimit text fields which contain commas?

BACK | CANCEL | CONTINUE TO THE NEXT STEP

**Step 3:** Create a title for the dataset. Enter a title that identifies the data source and type ([Screenshot 11](#)).

**Step 4:** Define the reporting period to match the reporting period of the source datasets. To define the reporting period for a specific quarter in a year, select the period quarter in the “Reported Quarter” dropdown box ([Screenshot 11](#)). If reporting annually and not quarterly, change the dropdown value to “blank.”

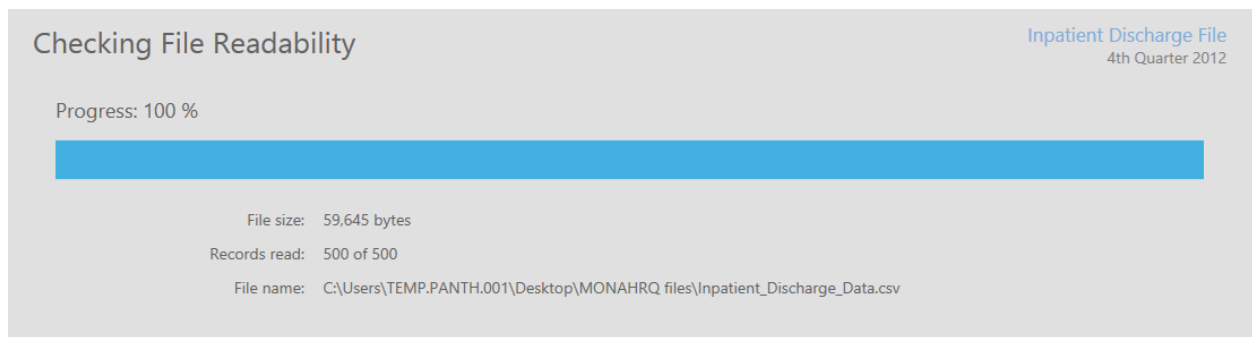
**Step 5:** Further define the reporting period by selecting the reporting year. To do this, select a value in the single-select “Reported Year” dropdown box ([Screenshot 11](#)). The dropdown box is populated with a range of 10 years before and 5 years after the current year.

**Step 6:** Click the “Browse” button to locate and then select the input dataset. The file path will be displayed in the input data file field ([Screenshot 11](#)). The dataset file must comply with the file type and layout specifications defined in [Appendix F](#).

**Step 7:** Complete the input file selection process by clicking the “Continue to Next Step” button ([Screenshot 11](#)).

**Step 8:** MONAHRQ will scan the dataset to check file readability and validate the size and attributes of the file ([Screenshot 12](#)). The file size, number of records read, file name, and location path will be displayed. An accepted file will result in a Progress indicator of 100 percent.

## Screenshot 12: Check File Readability Display

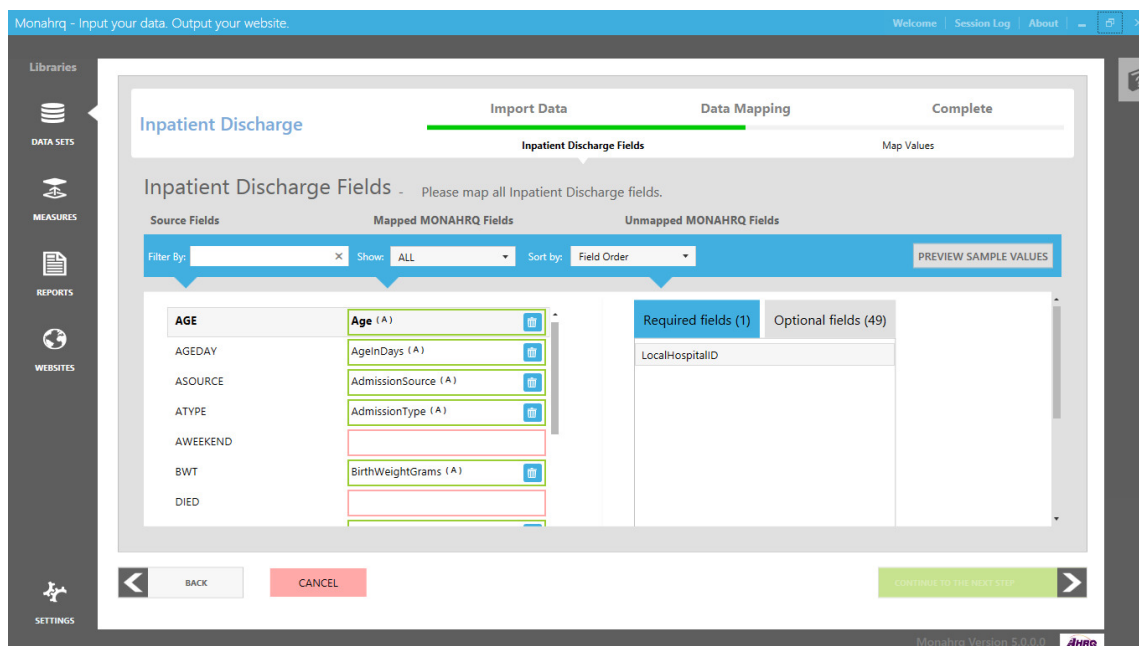


**Step 9:** Click the “Done” button to continue on to the next step.

### 4.2.3 Mapping the Datasets

Dataset mapping is the next phase of the file import process ([Screenshot 13](#)). MONAHRQ will automatically match as many of the data fields in the input file to the MONAHRQ data elements as possible. For additional information on the AHRQ QI datasets and the datasets prepared by your organization, refer to [Appendices H, I, and J](#). These sections provide helpful information including the recommended file header names (data elements), a description of the purpose of the field, and definitions of the data values to include in your files. Applying the recommended data element names as the field names in your files will result in more fields to be mapped by the auto-mapper service. The auto-mapper attempts to conservatively map fields between the MONAHRQ software and your imported datasets to reduce the number of incorrectly mapped fields during the process. Unmatched data fields will be identified by the system as “unmapped” and will need to be manually mapped. If the file structure of dataset types is standardized to MONAHRQ specifications, there will be no need to map the data fields, and this step will be skipped.

## Screenshot 13: Map Data Elements



The Dataset Mapping Element screen includes a mapping widget that is defined by three components:

1. **Your Fields** - Displays the field name of the imported dataset. An input field automatically mapped by the system will contain a name value. However, an input field that needs to be mapped will not contain a name value.
2. **MONAHRQ Fields** - Displays the MONAHRQ field name defined in the system. The input dataset field must be mapped to the MONAHRQ field. The MONAHRQ fields cannot be edited.
3. **Sample Values** - A sample value from the input dataset can be viewed by clicking the sample mapped values button located in the right side of the title header.

The panel on the left side of the screen lists the fields in your input file with the box directly to the right, which displays the mapped MONAHRQ field. If the box contains a MONAHRQ name in the form of a text value, this indicates that the field was mapped automatically during the import process. If the box is blank, this indicates that the field has not been mapped and needs to be manually mapped.

The panel on the right side of the screen contains two tabs that list all of the remaining required and optional MONAHRQ fields to be manually mapped to your input files. You will need to map all of the required fields in order to proceed to the next step in the import process.

The auto-mapping results will need to be verified, and unmapped fields will need to be identified and mapped. You can filter the mapping screen to display mapped fields for verification and unmapped fields for easy identification of what fields need to be mapped.

See below for a step-by-step guide to verifying the auto-mapping results.

**Step 1:** Review all auto-mapped selections determined by MONAHRQ by comparing the field in your dataset and the MONAHRQ field. Correlation between the two field values should be present. The sample value data can be referenced for this determination.

**Step 2:** If you determine that a different MONAHRQ field should be mapped to your input field, click on the trash can action icon on the MONAHRQ field. This will result in the fields being unmapped, and the unmapped MONAHRQ value will be displayed in the right panel, either under the Required or Optional field tabs. Once you have identified the correct MONAHRQ value to map, click the value and drag it to your input dataset field to map the values.

**Step 3:** Continue to map “Required” and “Optional” MONAHRQ fields to unmapped fields in your input dataset. Use the drag and drop process to complete the mapping process.

**Step 4:** Compare, verify, and map optional MONAHRQ fields and dataset fields by following the preceding steps.

**Step 5:** Click the “Save and Continue to Next Step” button after all MONAHRQ fields and input dataset fields are mapped.

**Step 6:** Auto-mapping assigns a definition to field values ([Screenshot 14](#)). Review the look-up value and value definition for correctness. To assign a new value definition, click the dropdown box in the field and select the appropriate value. The fields that are not completely assigned with a valid crosswalk value are red and will change to green once completed.

## Screenshot 14: Defining Field Values Screen

PAY1		
1	REPRESENTS	1 - Medicare
2	REPRESENTS	2 - Medicaid
3	REPRESENTS	3 - Private including HMO

**Step 8:** Click the Continue to the Next Step button after values are mapped and verified.

### 4.2.4 Data Mapping Summary Report

MONAHRQ generates a data mapping summary report that displays results from the file import mapping process. The report summarizes the data mapping between the input dataset files and the MONAHRQ dataset files ([Screenshot 15](#)).

## Screenshot 15: View Mapping Summary

ED Treat And Release

Import Data | Data Mapping | Complete

Mapping Summary

**Mapping Summary**  
This report summarizes the Data Mapping between the input file and the MONAHRQ Dataset that you have assigned on the previous screen. Certain variables are required to continue with the data analysis. See the Host User Guide for more detailed information.

MONAHRQ data element	Input file data element	Element position in your file
Age	AGE	0
Sex	SEX	18
Local Hospital ID	HOSPITAL_ID	19
Discharge Disposition	DISP_ED	2
Discharge Year	YEAR	30
Primary Diagnosis	DX1	3
Diagnosis Code 2	DX2	4
Diagnosis Code 3	DX3	5
Diagnosis Code 4	DX4	6

Variables In Input File: 31  
Input Variables Mapped to MONAHRQ Variables: 26  
Unused Input Variables: 5  
Unmapped Required MONAHRQ Variables: 5  
Unmapped MONAHRQ Variable Warning: 0

BACK | CANCEL | CONTINUE TO THE NEXT STEP

The mapping summary includes statistics on the number of variables in the input field and the number of unused and unmapped variables. The MONAHRQ input file layouts are listed, identifying the field value mappings and the unmapped fields. The results are used to determine whether there are any unused or unmapped variables; if there are, this issue will need to be resolved by correcting or completing the field mappings. Example summary report statistics from [Screenshot 15](#) are as follows:

- Variables in Input File: 31
- Input Variables Mapped to MONAHRQ Variables: 26
- Unused Input Variables: 5
- Unmapped Required MONAHRQ Variables: 5

- Unmapped MONAHRQ Variable Warnings: 0

**Step 1:** Click the “Continue to Next Step” button after you have reviewed and verified the summary report.

**Step 2:** Click the “Import Data” button to load the input dataset into MONAHRQ.

#### 4.2.5 Data Validation and Data Errors Report

MONAHRQ includes a data validation step that identifies invalid records in the input dataset file ([Screenshot 16](#)). The data errors report identifies specific records containing data errors. The report contains the record number, field name, validation indicator (i.e., “Validation Error” or “Warning”), and an error description. The information in this report can be used to correct the records in the input dataset file or to update mapping.

#### Screenshot 16: Data Validation Report Summary

Import Data

Summary

Record #	MONAHRQ Variable	Status	Message
5	Patient Zip Code	ValidationError	Value: 0331 Patient Zip Code The field Patient Zip Code must be a string with a minimum length of 5 and a maximum length of 5. value: 0331
10	Patient Zip Code	ValidationError	Value: 7111 Patient Zip Code The field Patient Zip Code must be a string with a minimum length of 5 and a maximum length of 5. value: 7111
24	Principal Diagnosis	Warning	Value: 45 Principal Diagnosis Must consist of 3-5 characters and digits with no decimal point. value: 45
27	Patient Zip Code	ValidationError	Value: 4441 Patient Zip Code The field Patient Zip Code must be a string with a minimum length of 5 and a maximum length of 5. value: 4441
29	Patient Zip Code	ValidationError	Value: 0442 Patient Zip Code The field Patient Zip Code must be a string with a minimum length of 5 and a maximum length of 5. value: 0442
37	Patient Zip Code	ValidationError	Value: 0442 Patient Zip Code The field Patient Zip Code must be a string with a minimum length of 5 and a maximum length of 5. value: 0442
33	Age	ValidationError	Value: <= NULL >= < Age The Age field is required. value: <= NULL >= <
33	Patient Zip Code	ValidationError	Value: 0881 Patient Zip Code The field Patient Zip Code must be a string with a minimum length of 5 and a maximum length of 5. value: 0881

# Records: 100  
# Valid: 388  
# Invalid: 114

### 4.3 Managing and Importing Hospital-Level Data

MONAHRQ allows you to manage the hospital-level data available in your websites. From the Hospital Data tab ([Screenshot 17](#)), you can edit hospital names and reference data, define category types, and assign geographic regions.

#### Screenshot 17: Hospital Data Tab

Monahrq - Input your data. Output your website. Welcome | Session Log | About

Libraries

DATA SETS

MEASURES

REPORTS

WEBSITES

SETTINGS

### Data Sets > Hospital Data

MANAGE YOUR DATA FILES  
Import or delete data files. Edit hospital details and geographic data

Measures Data Hospital Data

HOSPITALS

Edit hospital name and reference data, define category types and assign geographic regions  
Hospital data is sourced from the Provider of Services (POS) file provided by Centers for Medicare and Medicaid Services (CMS)

FILTER BY  
Hospital Name

	NAME	CATEGORY	REGION	STATE	ZIP CODE	LOCAL ID	CMS PROVIDER
<input type="checkbox"/>	Brattleboro Memorial Hospital	General	Brattleboro	VT	05301		470011
<input type="checkbox"/>	Southwestern Vermont Medical Center	General	Bennington	VT	05201		470012
<input type="checkbox"/>	Northwestern Medical Center Inc	General	St. Albans	VT	05478		470024
<input type="checkbox"/>	Grace Cottage Hospital	Medicaid Only Short-Term	Townshend	VT	05353		471300
<input type="checkbox"/>	Gifford Medical Center	Medicaid Only Short-Term	Randolph	VT	05060		471301
<input type="checkbox"/>	Mt Ascutney Hospital	Medicaid Only Short-Term	Windsor	VT	05089		471302
<input type="checkbox"/>	Northeastern Vermont	Medicaid Only Short-Term		VT	05819		471303

ADD NEW HOSPITAL +

IMPORT HOSPITALS >

ASSIGN CATEGORIES >

NEW GEOGRAPHIC CONTEXT >

Monahrq



### 4.3.1 Hospital Data Tab

The Hospital Data tab displays a list of all hospitals included in your Datasets Library, based on the Hospital Compare database and Inpatient Hospital Discharge (IP) file. The features on this tab allow you to edit and manage the hospitals in your Datasets Library, add or import new hospitals, assign categories, and assign geographic context to your MONAHRQ websites.

### 4.3.2 Mapping Hospital Compare and Inpatient Hospital Discharge (IP) Datasets

The hospital-level data in your MONAHRQ websites and reports is sourced from the Hospital Compare and Inpatient Hospital Discharge (IP) datasets. The hospital data records will need to be mapped across datasets accordingly. This mapping identifies the hospitals as unique entities for which there are two different data sources. The mapping can be completed by selecting a CMS Provider ID in the single-select dropdown box in the CMS Provider ID field for the given hospital record ([Screenshot 18](#)).

The measures contained in the Hospital Compare database use “CMS Provider ID” as the hospital identifier, while measures contained in AHRQ Quality Indicators™ (QI) use the local “Hospital ID” number. Because the local Hospital ID number contained in the IP file is not the same as the CMS Provider ID contained in the Hospital Compare database, you will need to map your local Hospital ID with the CMS Provider ID.



In addition, MONAHRQ uses cost-to-charge ratios (CCRs) for cost calculation. In order to use the built-in CCR values, the local Hospital ID number must be mapped to the CMS Provider ID number. Once you map the local Hospital ID with the CMS provider ID, the CCR is automatically assigned to hospitals.

### 4.3.3 Editing and Managing Hospital Attributes

Hospital-specific attributes can be edited to customize how hospitals are displayed in your MONAHRQ websites.

**Step 1:** In the “Hospital Name” category, click the checkbox to select the hospital to be edited ([Screenshot 18](#)). The selected hospital row will be highlighted in yellow.

#### Screenshot 18: Selecting Hospitals To Edit

		NAME	CATEGORY	REGION	STATE	ZIP CODE	LOCAL ID	CMS PROVIDER
<input type="checkbox"/>		Central Vermont Medical Center	General, Long Stay, Religious Non-Medical Care Facility	Berlin	VT	05602	0	470001
<input type="checkbox"/>		Fletcher Allen Hospital Of Vermont	General, Long Stay, Religious Non-Medical Care Facility	Burlington	VT	05408	0	470003

**Step 2:** Click the edit action icon to launch the Edit Hospitals screen.

**Step 3:** Navigate through the screen and update the hospital attributes by adding and editing text in the attribute fields.

### 4.3.4 Adding a New Hospital

You can manually add hospitals to your Datasets Library by accessing the Add Hospital screen. You will be required to enter the hospital attributes that would otherwise be sourced by a dataset file ([Screenshot 19](#)).

## Screenshot 19: Editing Hospital Attributes

**Hospital**  
Edit Hospital: Brattleboro Memorial Hospital

**NAME AND IDENTIFIERS**

Name:

Hospital ID:

CMS Provider:

CCR:

Ownership:

**ADDRESS**

FIPS County:

Street Address:

City:

FIPS State:

Zip:

Phone:

Fax:

**BASIC DESCRIPTIVE DATA**

Description (1000 characters):

Employees:

Total Beds:

☒ Medicare/Medicaid

☒ Emergency Service

☐ Trauma Service

☐ Urgent Care Service

☒ Pediatric Service

☐ Pediatric ICU Service

☐ Cardiac Catheterization Service

☒ Pharmacy Service

☐ Diagnostic X-Ray Service

**GEOGRAPHIC REGION**

Region:

**CATEGORIES**

Define the category types for this hospital.

☒ General

☐ Medicaid Only Short-Term

☐ Long Stay

☐ Rehabilitation

☐ Children's

☐ Psychiatric

☐ Transplant

☐ Religious Non-Medical Care Facility

☐ Distinct Part Psychiatric

☐ Medicaid Only General

☐ Medicaid Only Children's Hospitals

☐ Medicaid Only Children's Psychiatric

☐ Medicaid Only Psychiatric

☐ Medicaid Only Rehabilitation

☐ Medicaid Only Long Stay

**Step 1:** Type in text and values in the hospital attribute fields.

**Step 2:** Click the “Save Changes” button to save the text entered. This will result in adding the hospital to the list of hospitals displayed on your websites.

### 4.3.5 Importing Updated Hospital Datasets

A Hospital data file can be imported into MONAHRQ to update and overwrite specific hospital attributes sourced by the Hospital Compare or IP datasets. The CSV file layout contains the following fields, which will override the existing values in the Datasets Library, as shown in [Table 7](#).

**Table 7: Hospital Data File Layout**

Filed Name	Data Type	Required?
DSHOSPID	Numeric	Yes
FIPS	Alphanumeric	No
NAME	Alphanumeric	Yes
ZIP	Numeric	Yes
CCR	Numeric	No
REGION	Numeric	No

Click the “Import Data” button to browse and select a file to import. A warning message will appear, indicating that the file will overwrite the existing values in the Datasets Library.

### 4.3.6 **Selecting Hospitals for Reporting**

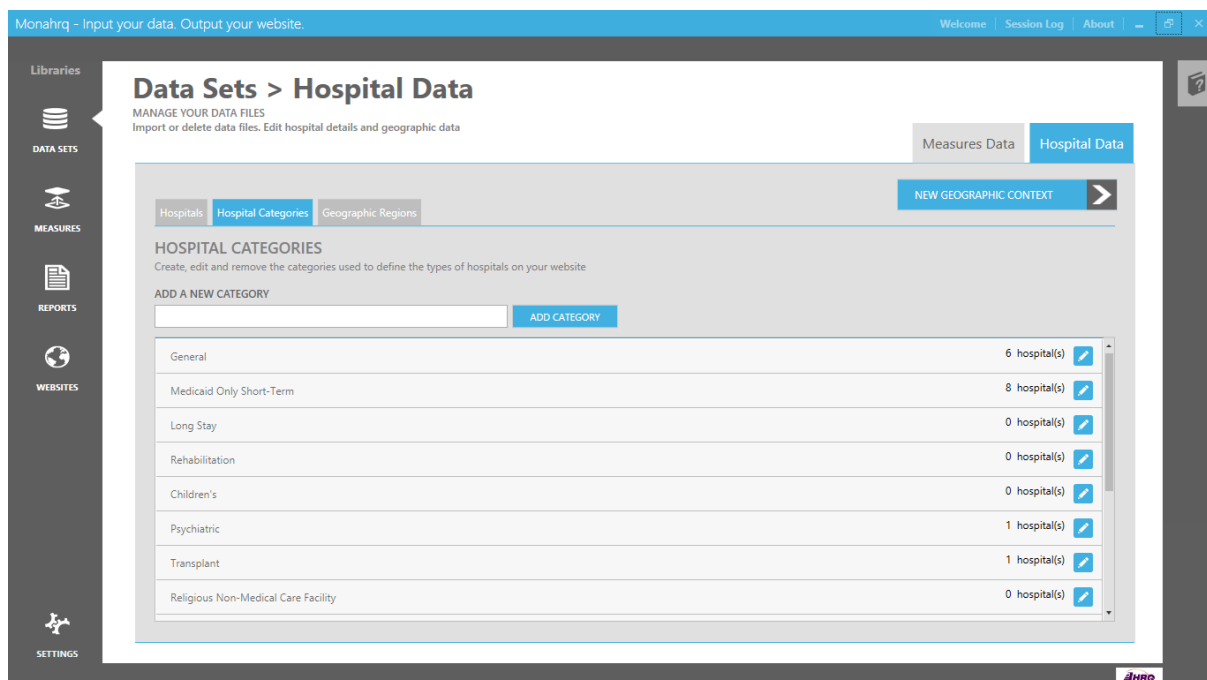
By default, all hospitals in the database will be included in your generated website reports. You have the ability to refine and define the list of hospitals to include in your generated website reports. A description of the process to define your hospital list specific to your website can be found in [Section 7.1.1](#).

## 4.4 **Hospital Categories Tab**

All hospitals can be designated with a preset or custom category type. MONAHRQ includes a preset list of category types to which your hospitals can be assigned. You can edit the name of a preset category or add your own custom category.

The category list includes the number of hospitals with the assigned category type ([Screenshot 20](#)). A hospital can be assigned more than one category type.

### **Screenshot 20: Hospital Categories Screen**



**Step 1:** Click the edit action icon for the given category you want to edit. The row will convert into an editable field.

**Step 2:** After editing the category name, click on the save action icon.

**Step 3:** The “Add a New Category” input field allows you to add a new category to which to assign your hospitals. Enter a new category title into the input field.

**Step 4:** Click on the “Add Category” button. The category will now be added to the list of categories.

To edit the custom category, select the edit action icon and edit the name. You can remove your custom category by selecting the delete topic action icon.

## 4.5 Creating and Organizing Hospital Geographic Regions for Datasets

MONAHRQ allows you to globally manage hospital geographic regions by mapping and creating geographic regions to organize the hospitals on your websites ([Screenshot 21](#)).

### Screenshot 21: Creating Hospital Geographic Regions

SELECT REGION TYPE HSA- Health Service Area

SELECT STATES YOU WILL BE WORKING WITH Select state

More than one state can be selected. Each state selected will appear below

CANCEL SAVE

**Step 1:** Click on the “New Geographic Context” button (as shown in [Screenshot 21](#)) to launch the Geographic Regions Management screen.

**Step 2:** Select the region type (e.g., Health Referral Region or Health Service Area) and the States with whom you will be working. Click on the “Apply Context” button to save your selections.

## 4.6 Customizing Regions

The Geographic Regions tab on the Hospital Data screen displays the region assignments for your hospitals ([Screenshot 22](#)). Within this screen you can edit the region name value. The Regions displayed on the screen are based on the Region Type you selected (e.g., HSA, HRR). You can also create custom regions to further assign your hospitals within a geographic region. Click the “Add New Custom Region” button to add a new region. In order to create a new custom region, you will need to enter the Region’s ID, name, State, and the ZIP Codes with which it is associated ([Screenshot 23](#)). The ZIP Code association will be used to determine the area population for your custom region.

### Screenshot 22: Geographic Regions Tab

Monahrq - Input your data. Output your website. Welcome Session Log About

Libraries

DATA SETS

MEASURES

REPORTS

WEBSITES

SETTINGS

Data Sets > Hospital Data

MANAGE YOUR DATA FILES

Import or delete data files. Edit hospital details and geographic data

Measures Data Hospital Data

Hospitals Hospital Categories Geographic Regions

NEW GEOGRAPHIC CONTEXT

GEOGRAPHIC REGIONS

Automatically map and create geographic regions to organize the hospitals on your website

ADD CUSTOM REGION:

Enter new region ID x Enter new region title x ADD NEW CUSTOM REGION +

Regions: 2

REGION ID	REGION NAME	STATE	REGION TYPE	HOSPITAL COUNT
3	Oak-VT	VT	Custom Region	10
4	Pine-VT	VT	Custom Region	11

IMPORT REGIONS

IMPORT POPULATION

Monahrq Version 5.0

## Screenshot 23: Add New Custom Region

To edit a geographic Region, click on the edit icon and change the required field name.

MONAHRQ allows you to import a custom geographic region for which your hospitals will be assigned. The CSV file layout contains eight required fields, which are shown in [Table 8](#). To import your custom region file, click the “Import Regions” button to open a window to browse and select your file to import. Once the import process has been completed, a confirmation message will be displayed.

**Table 8: Custom Geographic Region File Layout**

Filed Name	Data Type	Required?
REGION_ID	Numeric	Yes
REGION_NAME	Alphanumeric	Yes
STATE	Alphanumeric	Yes

## 4.7 Custom Region Population Reports

Three new MONAHRQ data elements: “HRRRegionID,” “HSARegionID” and “CustomRegionID” have been added to the Inpatient Discharge (IP) data set. In addition, it is possible to add additional column(s) in your IP data set and map to one or more new MONAHRQ data elements depending on the “Region Type” you select in the “Geographical Context” section. For example, when using HSA region, you can include the “HSARegionID” column in your IP file. If you map the “CustomRegionID” in addition to HRRRegionID” or “HSARegionID” data elements the custom region will take precedence and will ignore the Region Type selected in the Geographical Context. Please refer to the data dictionary for Inpatient data found in Appendix H for additional information.

## 4.8 Importing Custom Region Population

Upload your custom region population data to MONAHRQ under the “[Region](#)” tab. The population data in the imported file is then used to calculate the “Rate of Discharges” displayed in the Region Population Reports. The data dictionary for Custom Region Populations can be found in [Appendix P, Table 22](#). Each data element is also explained below. All the fields must contain a numerical value. NULL values are not accepted.

1. REGIONID – The region ID you assign to your custom regions.
2. SEX - Acceptable values for this element are shown in [Appendix P, Table 24](#). For rows where both males and females are included, insert zero (0). For example, when reviewing a data set that consists of all males and females (of all races) and the <18 age group population, the row should look like the following:

REGIONID, SEX, AGEGROUP, RACE, YEAR, POPULATION  
234, 0, 1, 0, 2013, 8000

3. AGEGROUP - The acceptable values for this element are shown in [Appendix P, Table 25](#). For rows where all age groups are included, insert zero (0). For example, when reviewing a data set

that consists of all males (of all races) and including all age group populations, the row should look like the following:

REGIONID, SEX, AGEGROUP, RACE, YEAR, POPULATION  
234, 1, 0, 0, 2013, 2345

4. RACE - The acceptable values for this element are shown in [Appendix P, Table 26](#). For rows where all races are considered, insert zero (0). For example, for all white male and female population, the row should look like the following:

REGIONID, SEX, AGEGROUP, RACE, YEAR, POPULATION  
234, 0, 0, 1, 2013, 1234

5. YEAR - The year for the population collection.
6. POPULATION – The total number of people represented in a given data set.

The (stratified) MONAHRQ detailed reports are grouped by one dimension at a time and do not support granular stratification. For example, records such as, “White males <18 years population” are not supported. Records like these in the custom region population data file will be rejected and will display an error.

**Data not supported:**

REGIONID, SEX, AGEGROUP, RACE, YEAR, POPULATION  
234, 1, 1, 1, 2013, 532

## **4.9 DRG and MDC Data Import Process**

MONAHRQ is embedded with Medicare Severity Diagnosis Related Groups (MS-DRG) and Major Diagnosis Code (MDC) grouper software, produced by the National Technical Information Service (<http://www.ntis.gov/products/grouper.aspx>). It is optional to use this embedded grouper, as MONAHRQ allows you to override the process by loading your own MDC-DRG assignments. The DRG and MDC data are used to source your Inpatient Utilization reports.

The Datasets Library will display a status description of the import process steps and confirmation that the processing has been completed ([Screenshot 24](#)).

## Screenshot 24: Datasets Library—Inpatient Discharge Dataset Display

The screenshot shows the Monahrq web application interface. The top navigation bar includes 'Monahrq - Input your data. Output your website.', 'Welcome', 'Session Log', and 'About'. The left sidebar contains icons for 'Libraries', 'DATA SETS', 'MEASURES', 'REPORTS', 'WEBSITES', and 'SETTINGS'. The main content area is titled 'Data Sets > Measures Data' and includes a sub-header 'MANAGE YOUR DATA FILES' with the instruction 'Import or delete data files. Edit hospital details and geographic data'. Below this, there are tabs for 'Measures Data' and 'Hospital Data'. The 'Measures Data' tab is active, showing a list of datasets on the left: 'Inpatient Discharge' (selected), 'ED Treat And Release', 'AHRQ-QI Area Data', 'AHRQ-QI Composite Data', 'AHRQ-QI Provider Data', 'Hospital Compare Data', and 'Medicare Provider Charge Data'. The 'Inpatient Discharge' dataset is expanded, showing a table with the following columns: 'Data record name', 'Reporting Quarter', 'Reporting Yr', 'DRG/MDC Status', and 'Date Imported'. The table contains one row: 'Inpatient Discharge' with a reporting year of 2013, a status of 'Completed', and a date imported of 6/27/2014 3:33:28 PM. The status 'Completed' is highlighted in yellow. The bottom right corner of the application shows the 'AHRQ' logo.

Once the Inpatient Discharge file has been imported, the software will confirm if the DRG and MDC values have been included and if the columns in your Inpatient Discharge file have been mapped to the MONAHRQ database variables. If the data values have been included and mapped to the DRG and MDC columns, the “DRG/MDC Mapping Status” column in the Datasets Library display column will display a status of “User Provided” ([Screenshot 24](#)).

If you have not mapped the DRG and MDC columns, the software will calculate the DRG and MDC values as a background assignment and they will be shown in your taskbar with the MONAHRQ Icon. The “DRG/MDC Mapping Status” column will display a status of “Assignment in progress.” Once the assignment is completed, the status will update to reflect this.

## CHAPTER 5. MANAGING YOUR MEASURES LIBRARY

### 5.1 Managing and Customizing Measures

The Measures Library allows you to manage the measures reported on your MONAHRQ® websites. The MONAHRQ 5.0 library contains a base set of standard, preassigned topics and measures for the Hospital Compare database, AHRQ Quality Indicator™ (QI) measures (Area, Provider, and Composite measures), Hospital Inpatient Discharge data, and Emergency Department (ED) Treat-and-Release dataset.

As the Host User, you can customize your websites by updating existing measures to better meet your needs. The Manage Measures screen and the Manage Topics screen allow you to navigate, search, and filter the list of measures and topics. A link to the current MONAHRQ 5.0 list of measures can be found in [Appendix B](#).

The Manage Measures screen allows you to view all measures in the library that are available for use on your MONAHRQ websites ([Screenshot 25](#)). Attributes associated with each measure, such as the website name, topics and subtopics, and datasets are displayed for each measure in the list. If you need to edit measures or assign measures to topics, you can make those changes by using the features on this screen.

#### Screenshot 25: Manage Measures Screen

Monahrq - Input your data. Output your website. Welcome | Session Log | About | ... | X

Libraries

DATA SETS

MEASURES

REPORTS

WEBSITES

SETTINGS

### Measures > Manage Measures (143)

MANAGE YOUR MEASURES AND TOPICS

Manage Measures (143) Manage Topics (18)

**Measures**  
Select measures to assign topics and sub-topics, edit the measure name and description, and modify measure attributes

Filter by: None filter text... X All Datasets RESET Records: 143 Details View Off

Measure name	Code	Websites	Topics and Sub-Topics	Data Sets
Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate	30DAY_MORT_HA	State Health Data Organization's MONAHRQ Website	Heart attack and chest pain > Results of care; Deaths and readmissions > Heart a...	Hospital Compare Data
Hospital 30-Day Death (Mortality) Rates for Heart Failure Compared to US Rate	30DAY_MORT_HF	State Health Data Organization's MONAHRQ Website	Heart failure > Results of care; Deaths and readmissions > Heart failure	Hospital Compare Data
Hospital 30-Day Death (Mortality) Rates for Pneumonia Compared to US Rate	30DAY_MORT_PN	State Health Data Organization's MONAHRQ Website	Pneumonia > Results of care; Deaths and readmissions > Pneumonia	Hospital Compare Data
Hospital 30-Day Readmission Rates for Heart Attack Compared to US Rate	30DAY_READM_HA	State Health Data Organization's MONAHRQ Website	Heart attack and chest pain > Results of care; Deaths and readmissions > Heart a...	Hospital Compare Data
Hospital 30-Day Readmission Rates for Heart Failure Compared to US Rate	30DAY_READM_HF	State Health Data Organization's MONAHRQ Website	Heart failure > Results of care; Deaths and readmissions > Heart failure	Hospital Compare Data
Hospital 30-Day Readmission Rates for Pneumonia Compared to US Rate	30DAY_READM_PN	State Health Data Organization's MONAHRQ Website	Pneumonia > Results of care; Deaths and readmissions > Pneumonia	Hospital Compare Data
Heart Attack Patients Given a Prescription for a Statin at Discharge	AMI-10	State Health Data Organization's MONAHRQ Website	Heart attack and chest pain > Recommended care - Inpatient	Hospital Compare Data
Heart Attack Patients Given Aspirin at Discharge	AMI-2	State Health Data Organization's MONAHRQ Website	Heart attack and chest pain > Recommended care - Inpatient	Hospital Compare Data
Patients Given Fibrinolytic Medication	AMI-7a	State Health Data Organization's	Heart attack and chest pain >	Hospital Compare Data

AHRQ

#### 5.1.1 Filtering Measures

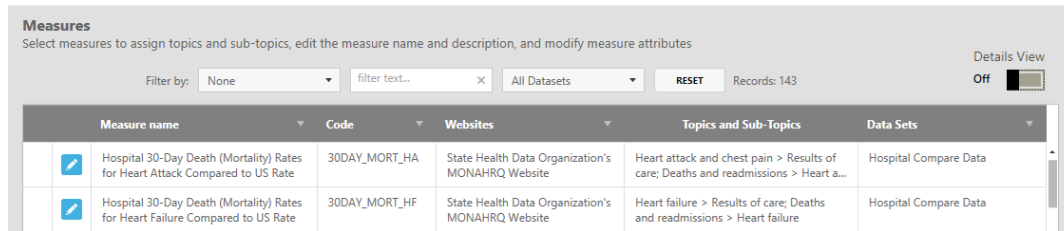
The “Filter by” feature allows you to view a refined list of targeted measures by filtering on the following criteria: Measure Code, Measure Name, Website Name, Topic and Subtopic Name, and All Datasets ([Screenshot 26](#)).





**Step 1:** Select a filter value in the single-select “Filter by” dropdown box.

**Step 2:** Enter a keyword or phrase in the search input box next to the dropdown box containing your “filter by” criteria. The measures list will filter the measures to match your search criteria.

### Screenshot 26: Measure Filter by Attribute and Datasets



The screenshot shows the 'Measures' section of a web application. At the top, there's a header with the title 'Measures' and a subtitle 'Select measures to assign topics and sub-topics, edit the measure name and description, and modify measure attributes'. Below this is a filter bar with a 'Filter by:' dropdown set to 'None', a search input field with 'filter text...', a 'filter text...' button, a 'All Datasets' dropdown, a 'RESET' button, and a 'Records: 143' indicator. On the right, there's a 'Details View' toggle set to 'Off'. The main content is a table with the following columns: 'Measure name', 'Code', 'Websites', 'Topics and Sub-Topics', and 'Data Sets'. The table contains two rows of data.

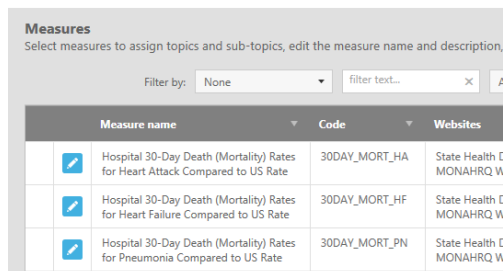
Measure name	Code	Websites	Topics and Sub-Topics	Data Sets
 Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate	30DAY_MORT_HA	State Health Data Organization's MONAHRQ Website	Heart attack and chest pain > Results of care; Deaths and readmissions > Heart a...	Hospital Compare Data
 Hospital 30-Day Death (Mortality) Rates for Heart Failure Compared to US Rate	30DAY_MORT_HF	State Health Data Organization's MONAHRQ Website	Heart failure > Results of care; Deaths and readmissions > Heart failure	Hospital Compare Data

Measure details, attributes, and assigned topics can be updated to meet the specific objectives of your MONAHRQ website.




### 5.1.2 Assigning a Topic or Subtopic

If you want to customize your website, MONAHRQ 5.0 allows you to update the standard base set of measures by assigning different topics and subtopics to each measure. If needed, new topics and subtopics can be added to MONAHRQ. You can assign more than one topic or subtopic to a measure using the following steps ([Screenshot 27](#)).

### Screenshot 27: Selecting a Measure for Assigning Topics and Subtopics

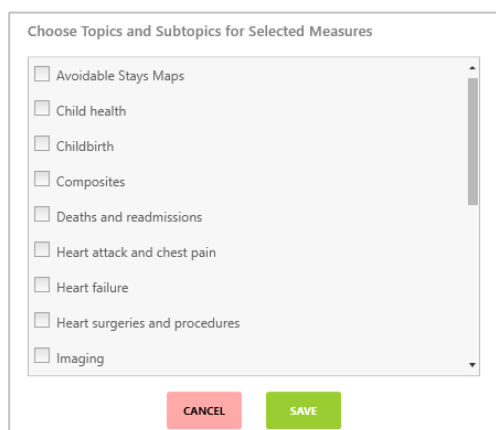


The screenshot shows the 'Measures' section of a web application. At the top, there's a header with the title 'Measures' and a subtitle 'Select measures to assign topics and sub-topics, edit the measure name and description, and modify measure attributes'. Below this is a filter bar with a 'Filter by:' dropdown set to 'None', a search input field with 'filter text...', a 'filter text...' button, and a 'filter text...' button. The main content is a table with the following columns: 'Measure name', 'Code', and 'Websites'. The table contains three rows of data.

Measure name	Code	Websites
 Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate	30DAY_MORT_HA	State Health C MONAHRQ W
 Hospital 30-Day Death (Mortality) Rates for Heart Failure Compared to US Rate	30DAY_MORT_HF	State Health C MONAHRQ W
 Hospital 30-Day Death (Mortality) Rates for Pneumonia Compared to US Rate	30DAY_MORT_PN	State Health C MONAHRQ W

**Step 1:** Click the “Assign Topics” button to launch the “Choose Topics and Subtopics for Selected Measures” window ([Screenshot 28](#)).

## Screenshot 28: Choose Topics and Subtopics for Selected Measures Window



**Step 2:** Identify the topic(s) you wish to assign to your measure(s) by using the scroll bar and selecting the appropriate topic checkbox ([Screenshot 28](#)). The topics and subtopics displayed in the window are also visible on the Manage Topics tab of the Manage Measures screen.

**Step 3:** Click “Save.”

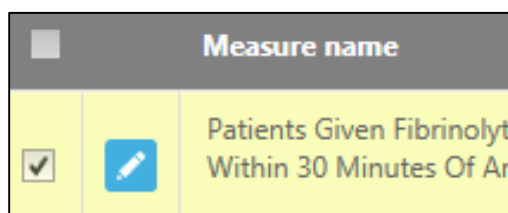
**Step 4:** Review the measures you selected in the “Topics and Subtopics” column to confirm that the topic and subtopic values were updated correctly.

### 5.1.3 Updating Measure Details and Attributes

MONAHRQ also contains standard predefined properties (metadata) for the new and existing data sources stored in the Datasets Library.

From the Measures Library, you can update the properties for a specific measure by clicking on the “Edit” action icon as seen in [Screenshot 29](#), which will launch the Edit Measure screen, as seen in [Screenshots 29–31](#). Updating the measure properties is optional. However, if you choose to edit the measure properties, instructions to do so are provided below.

## Screenshot 29: Measures Edit Button



### 5.1.3.1 Measure Name and Description Tab

Measure descriptions can be edited in the “Measure Description” free-text box. This is a rich text editor used to store the description for each measure. The measure description will be displayed to the End User on the generated website.

By default, the measure name and header come from the measure’s clinical title field, which can be found in the “Alternate Measure Names” block ([Screenshot 30](#)). For longer titles, the header will display two

lines followed by "...". Hovering over the shortened title will show you the full title. Step-by-step instructions for editing measure names and descriptions are provided below.

### Screenshot 30: Edit Measure Details and Attributes Screen

[All Measures](#)

## Measure > Edit details

EDIT MEASURE DETAILS AND ATTRIBUTES

### Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate (Code: 30DAY\_MORT\_HA )

Name and Description | Attributes | Reference

**MEASURE DESCRIPTION**

Hospitals keep track of how many of their patients died soon after getting care for a heart attack (this is called a death rate). These rates show how many patients died within 30 days of going to the hospital for a heart attack, and takes into account how sick patients were before they went to the hospital.

**ALTERNATE MEASURE NAMES**

Plain Language: Dying within 30-days after getting care in the hospital for

Clinical: Hospital 30-Day Death (Mortality) Rates for Heart Attack

CANCEL SAVE CHANGES

**Step 1:** Click inside the “Measure Description” text box and enter in an appropriate description for the measure in question.

**Step 2:** Select the “Clinical” name field with the appropriate measure name.

**Step 3:** After entering the desired text, click the “Save Changes” button. A confirmation window will appear, confirming that your changes to the content were saved.

#### 5.1.4 Measure Attributes Tab

The Measure Attributes tab ([Screenshot 31](#)) is divided into three main components: “Measure Description,” where you can assign multiple topics and subtopics to the specific measure you are editing; “Display,” where you can configure the attributes to be displayed on your website; and “Calculations,” where you can modify the measure calculations—for example, you can choose to report and display State benchmark data based on the median rather than the mean value.

## Screenshot 31: Measure Attributes Tab

The screenshot shows the MONAHRQ web application interface. The top navigation bar includes 'Monahrq - Input your data. Output your website.' and links for 'Welcome', 'Session Log', and 'About'. A left sidebar contains icons for 'Libraries', 'DATA SETS', 'MEASURES', 'REPORTS', 'WEBSITES', and 'SETTINGS'. The main content area is titled 'Measure > Edit details' and 'EDIT MEASURE DETAILS AND ATTRIBUTES'. The specific measure being edited is 'Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate (Code: 30DAY\_MORT\_HA)'. The 'Attributes' tab is selected, showing three main sections: 'MEASURE DESCRIPTION', 'DISPLAY', and 'CALCULATIONS'. The 'MEASURE DESCRIPTION' section has checkboxes for 'Avoidable Stays Maps' (Chronic Lung Conditions, Composites, Diabetes, Heart Conditions, Other Conditions, Patient Safety, Procedure Rates), 'Child health' (Child health), and 'Childbirth' (Practice patterns, Results of care). The 'DISPLAY' section includes radio buttons for 'Higher scores are better' and 'Lower scores are better' (selected), a 'More information' text area, 'URL Title', 'URL', and 'Footnotes' (numbered 1). The 'CALCULATIONS' section includes a 'Scale By' field (100), 'National Benchmark' (15.5000000), 'Upper Bound' (0), 'Lower Bound' (0), 'State/Peer Benchmark' (Calculated: Mean selected, Provided: 0), and 'Suppression Threshold' (Numerator: 0, Denominator: 0). A 'Perform Manual Calculation' checkbox is at the bottom. 'CANCEL' and 'SAVE CHANGES' buttons are at the bottom right.

**Measure Description:** The topics and subtopics list contains all of the standard preassigned topics in MONAHRQ. Select the checkboxes for the topics and subtopics that are appropriate for the specific measure you are editing.

**Display:** The following display attributes can be configured:

- **Score direction**—Select the radio button that is appropriate based on the structure of the measure. The two options are: (1) Higher scores are better, or (2) Lower scores are better (i.e., 10 is best and 1 is worst, or vice versa).
- **URL Title**—You can create a name for the external measure URL. Enter a title name that is descriptive and associated with the measure URL.
- **URL**—You can also create a custom external URL to link to the reported measure. Create a custom URL to define the reported measure by entering text into the text box.
- **Footnotes**—Reports provide space for footnotes that are defined in this field. Footnotes are numbered and are displayed at the bottom of reports. Enter descriptive text in the footnotes box related to the specific measure.

**Calculations:** This block contains calculation input fields you can update in the system for measures you upload in the future. Note that the measure calculations in the Hospital Compare and AHRQ QI Provider, Area, and Composite files cannot be edited. For other measures, MONAHRQ allows you to update the following fields:

- **Scale By**—You can customize the scale size of the analytic values displayed in the measures. The default scale size is 100 and indicates how the measure is represented. Enter a numeric value into the “Scale By” text box.
- **National Benchmark Sources**—This is a multiline text box where you can input the source of the benchmark. Enter alphanumeric text into the text box. (Example: *Agency for Healthcare Research and Quality (AHRQ)*)

- **National Benchmark**—You can override the system by assigning a custom numeric National Benchmark value that is more in-line with your reporting needs. This value will be prepopulated, but it can be updated. Enter a numeric value into the National Benchmark box. (*Example: 0.8384*)
- **Upper and Lower Bounds**—Specific measures, including OP-9 (Mammography Follow-up Rates), require an upper and lower boundary to demine the caliber of the result. These values will be used in the methodology for comparing hospitals. Enter a numeric value for the upper and lower bounds in the associated text boxes (a numeric value only, up to 15 characters).
- **Peer, State, and Provided Benchmarks**—MONAHRQ allows you to define a method for using State benchmark values by using either a calculated value or a precalculated value. Select the radio button for the correct Peer or State benchmarking method: “calculated mean” or “calculated median.” If you are using a precalculated value, enter the value in the “Provided” text box.
- **Suppression Threshold**—You can define the numerator and denominator threshold values by measure. Enter a numerator and/or denominator suppression value in the associated text boxes.

Once you have finished updating the fields, save your changes by selecting the “Save Changes” button.

#### 5.1.4.1 Reference Tab

The Reference Tab displays a description of the attributes for the measure you edited ([Screenshot 32](#)). The information displayed allows you to verify the edited measure configurations and settings. The Reference Tab identifies the following attributes:

- Clinical Title (e.g., Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to U.S. Rate)
- Measure Type (e.g., Process, Structure, Outcome)
- Source (e.g., CMS, AHRQ QI)
- NQF Endorsed (e.g., Yes, No)
- NQF ID (e.g., 0359)
- Better High/Low (e.g., Higher rates are better, Lower rates are better)

#### Screenshot 32: Reference Tab

The screenshot shows the MONAHRQ web application interface. The top navigation bar includes "Welcome", "Session Log", and "About". The left sidebar contains icons for "Libraries", "DATA SETS", "MEASURES", "REPORTS", "WEBSITES", and "SETTINGS". The main content area is titled "Measure > Edit details" and "EDIT MEASURE DETAILS AND ATTRIBUTES". The measure being edited is "Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate (Code: 30DAY\_MORT\_HA)". The "Reference" tab is selected, showing the following attributes:

- Clinical Title:** Hospital 30-Day Death (Mortality) Rates for Heart Attack Compared to US Rate
- Measure Type:** Outcome
- Source:** CMS
- NQF Endorsed:** True
- NQF ID:**
- Better High/Low:** Lower the better

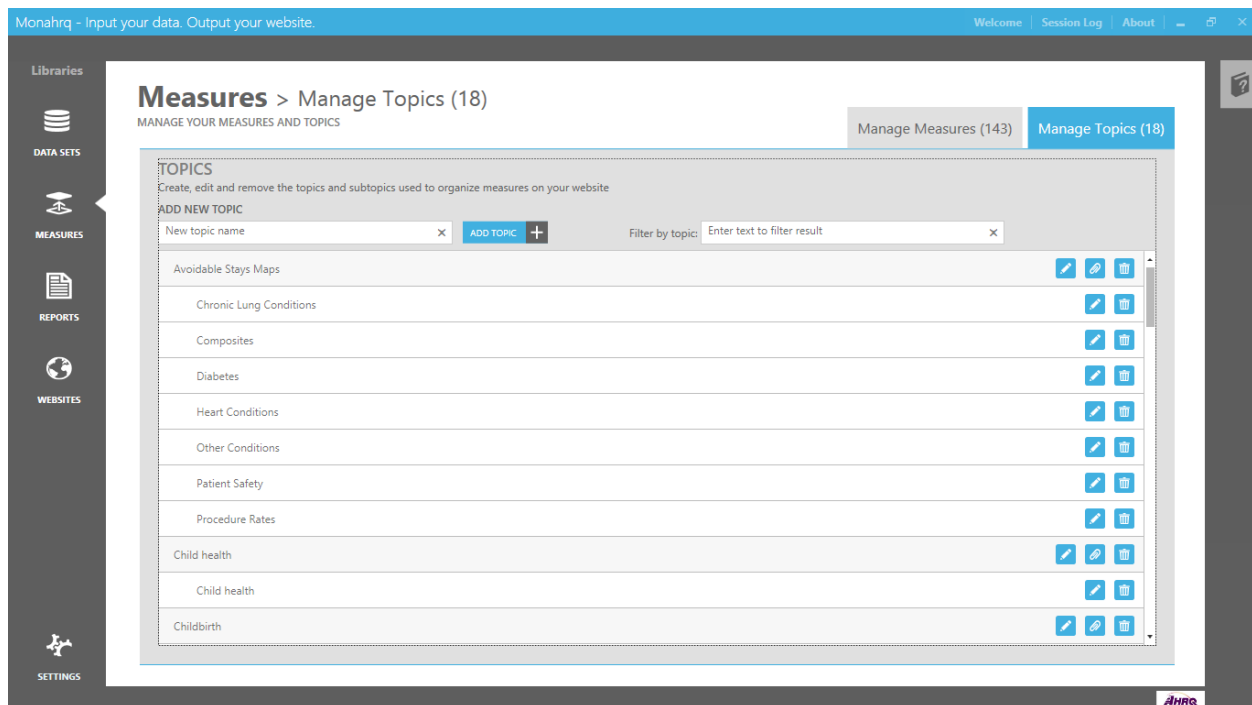
At the bottom right, there are "CANCEL" and "SAVE CHANGES" buttons. The AHRQ logo is visible in the bottom right corner.

## 5.2 Add, Edit, or Remove Topics and Subtopics

The Manage Topics tab allows you to add, edit, or remove the topics and subtopics used to organize the measures in your website.

The “Filter By” feature allows you to filter the information displayed on the screen by entering a keyword or phrase from the topic or subtopic options from the dropdown menu in the “Filter by” text box ([Screenshot 33](#)). This feature uses an autocomplete filtering mechanism and will start filtering the topic and subtopic list once you start typing.

### Screenshot 33: Manage Topics Tab



### 5.2.1 Adding a New Topic or Subtopic

MONAHRQ requires that all measures are assigned a topic or subtopic. You can add a new topic if a predefined topic does not sufficiently classify your measure. After you have created a new topic, it will be added to the list of topics and subtopics.

**Step 1:** In the “Add New Topic” text box, enter a topic name that best classifies your measure.

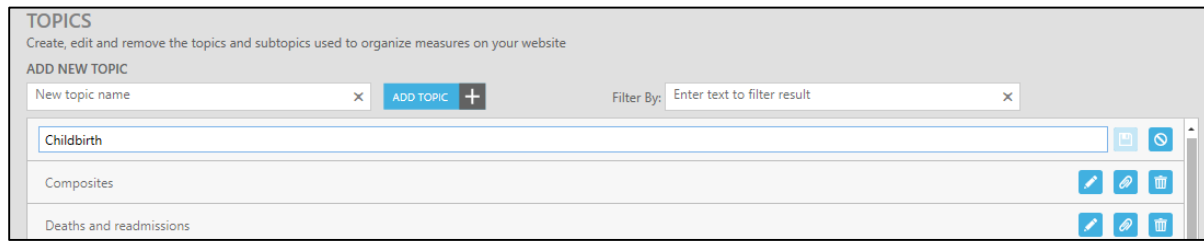
**Step 2:** Click on the “Add Topic” button.

### 5.2.2 Editing a Topic Name, Assigning Subtopics to Parent Topics, and Deleting Topics

You may also edit topic attributes, attach or assign a subtopic to a parent topic, and delete topics available for your website’s measures. These actions can be performed by using the action icons and steps below ([Screenshot 34](#)).

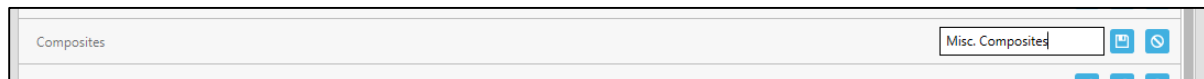
**Step 1:** Click on the “Edit” action icon to begin editing the topic name. You will notice the original name is removed and you can enter a new name in the free-text box. When finished, click on the “Save Changes” action icon.

### Screenshot 34: Manage Topics Screen—Editing Topic Name Detail



**Step 2:** To add a subtopic and link it to a parent topic, click on the attachment action icon. You will notice that a text box will appear to the left of the action items where you can enter a subtopic name ([Screenshot 35](#)). After entering the name, click the “Save Changes” icon. To delete the subtopic record, click on the “Delete” action icon.

### Screenshot 35: Detail of the Manage Topics Screen—Adding a Subtopic



## CHAPTER 6. BUILDING AND USING YOUR REPORTS LIBRARY

The Reports Library allows you to manage the report templates used on your MONAHRQ websites. The MONAHRQ 5.0 library contains a base set of standard preconfigured reports. You can further customize your website by creating new report descriptions and footnotes to better meet your website needs. A link to the MONAHRQ 5.0 list of measures can be found in [Appendix B](#).

The Reports screen displays standard and custom report attributes. You can access the Reports screen at any time while creating your new MONAHRQ website or while maintaining an existing website by clicking on the “Reports” icon on the left-side panel ([Screenshot 36](#)).

### Screenshot 36: Manage Reports Screen

The screenshot shows the MONAHRQ Reports screen. The left sidebar contains navigation icons for Libraries, DATA SETS, MEASURES, REPORTS (highlighted), WEBSITES, and SETTINGS. The main content area is titled "Reports" and "MANAGE YOUR REPORTS". It includes a search bar, a filter by category dropdown (set to "All Report Categories"), and a table of report templates.

Report	Websites	Type	Category	Custom?	Datasets	Recommend
Hospital Comparison Report - Bar Chart	State Health Data Organization's MONA...	Hospital Comparison Report - Bar Chart	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
Hospital Comparison Report - Icons	State Health Data Organization's MONA...	Hospital Comparison Report - Icons	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
Hospital Comparison Report - Icons and Confidence Intervals	State Health Data Organization's MONA...	Hospital Comparison Report - Icons and Confidence Intervals	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
Hospital Profile Report	State Health Data Organization's MONA...	Hospital Profile Report	Quality	No	Hospital Compare Data, Inpatient Discharge, Medicare Provider Charge Data	Consumers, All Audiences
Hospitals listings based on the search from the home page	State Health Data Organization's MONA...	Hospitals listings based on the search from the home page	Quality	No	Hospital Compare Data	Consumers, All Audiences
Hospitals Quality Ratings - Bar Chart	State Health Data Organization's MONA...	Hospitals Quality Ratings - Bar Chart	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences

Reports can be used for one website or across all of your MONAHRQ sites. The reports are identified in the “Report column” and the associated website can be found in the “Websites” column. On the Reports screen, sort by attribute by clicking on the appropriate column header. The standard report templates are defined by report types—listed in the “Type” column—which are not editable. Multiple copies of any report template for a specific report type can be created and customized. The standard MONAHRQ report types can be found in [Table 11](#) in [Chapter 10](#).

The “Category” column indicates whether a particular report is categorized as a “Quality” report or a “Utilization” report. Reports are grouped under these two categories to determine where they appear on your MONAHRQ-generated website.

### 6.1 Managing and Customizing Reports

This section describes the process for customizing report templates for your MONAHRQ website. You can select a standard report template and use its predefined settings to create your customized report, or you can select a report template and modify it with your own settings.

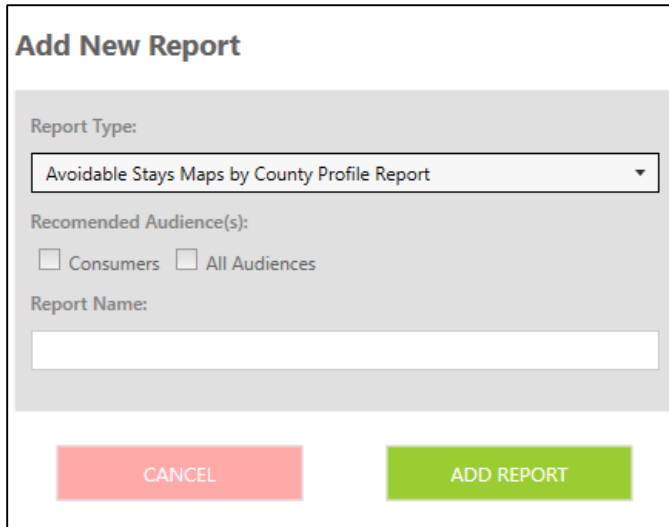


### 6.1.1 Using the “Add New Report” Feature

You can generate a new report by selecting a report template that does not include predefined settings.

**Step 1:** Click the “Add New Report” button on the Reports screen to launch the “Add New Report” popup window, as shown in [Screenshot 37](#).

#### **Screenshot 37: Add New Report Detail**



**Step 2:** Select the appropriate report type on the single-select “Report Type” dropdown menu. You will see a list of all available report templates.

**Step 3:** Select the “Recommended Audience” by selecting the associated checkbox: consumers, or all audiences. The audience options are “Consumers,” which is defined as the general public, consumers, and patients; and “All Audiences,” which is defined as the general public, clinical users, policymakers, and researchers and analysts. The reports displayed and made available for End Users on the generated website are audience-specific. When selecting the audience type, refer to the audience-to-reports matrix in [Table 11](#) in [Chapter 10](#).

**Step 4:** Enter a report name containing alphanumeric text in the “Report Name” text box. The report name should be descriptive of the report to be created.

**Step 5:** Click the “Add Report” button. Your new report will be added to the list of available reports in the Reports screen, highlighted in yellow.





**Step 6:** Verify that your new report contains the attributes you assigned by reviewing the report record in the reports list. The “Custom?” field will contain a value of “Yes” for your new report. Standard reports display a custom value of “No.”

### 6.1.2 Cloning and Editing a Standard Report

A simple way to create a custom report based on a standard report template is to clone an existing report and update the “Name and Description” content and configure the “Report Attributes.”

**Step 1:** Click on the standard report record you want to use as a base for your cloned report. The record will be highlighted in yellow and the edit action icons will be enabled ([Screenshot 38](#)).

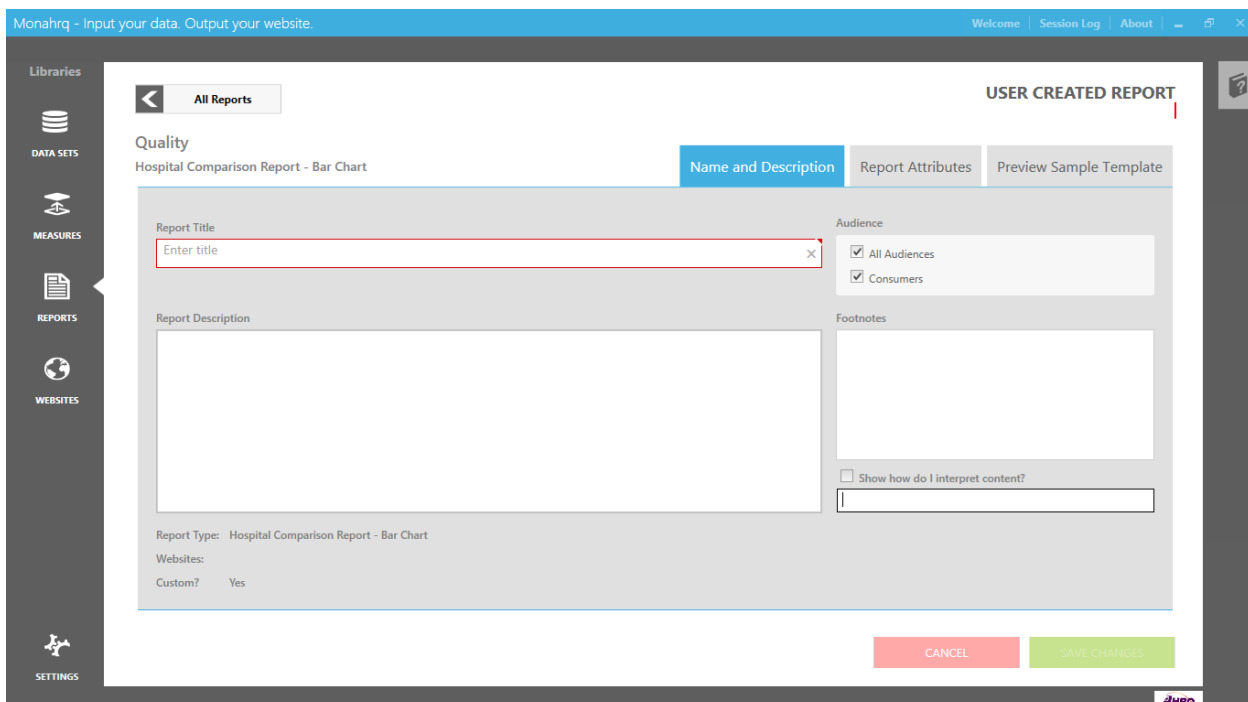
### Screenshot 38: Edit Standard Report Record Detail

Report	Websites	Type	Category	Custom?	Datasets	Recommendations
  Hospital Comparison Report - Bar Chart	State Health Data Organization's MONA...	Hospital Comparison Report - Bar Chart	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
  Hospital Comparison Report - Icons	State Health Data Organization's MONA...	Hospital Comparison Report - Icons	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences

**Step 2:** Click on the edit action icon, which will launch the Report Template screen.

The Report Template screen consists of three tabs that contain editable fields and attributes as well as a report preview feature ([Screenshot 39](#)). The report name, description, and attributes cannot be edited until you choose to create a new report template, as described in Step 3 below.

### Screenshot 39: Edit Standard Report Screen



**Step 3:** Click on the “Create new report based on this template” button to activate the report template for cloning and editing. The report title label will update to read “User Created Report.” After completing this step, you can begin customizing your report.

**Step 4:** Select the “Name and Description” tab to edit these fields, select an audience type, and add a footnote. You must enter a report title in the given field.

**Step 5:** You can provide a description of the report to be used for your reference. This description will not be displayed on your MONAHRQ website.

**Step 6:** As the administrator and creator of your MONAHRQ website, you must also select an audience type. This will identify the main users of your website. The audience options are “Consumers,” which is defined as the general public, consumers, and patients; and “All Audiences,” which is defined as the general public, clinical users, policymakers, and researchers and analysts.

**Step 7:** The footnote text area is used to store the footnotes for each report. You can edit the default footnotes, which will be displayed on your MONAHRQ-generated website. After entering in the required report name and audience and optional description and footnotes, click on the “Save Changes” button to complete this step.

Next, you will need to review and configure your report settings. The “Report Attributes” tab is divided into subtabs that allow you to perform these configuration changes ([Screenshot 40](#)). Depending on the report type, the tabs and checkbox values may be hidden on the screen. For example, the hospital profile report will show just one subtab, “Display,” because other subtabs are not relevant to the hospital profile report.

### Screenshot 40: Report Attributes Tab

Monahrq - Input your data. Output your website. Welcome | Session Log | About

Libraries

DATA SETS

MEASURES

REPORTS

WEBSITES

SETTINGS

USER CREATED REPORT

All Reports

Quality

Hospital Comparison Report - Bar Chart

Name and Description | **Report Attributes** | Preview Sample Template

Filters

Select the filtering options for this report.

Hospital Filters	
<input checked="" type="checkbox"/>	Hospital Name
<input checked="" type="checkbox"/>	Hospital Type
<input checked="" type="checkbox"/>	Region
<input checked="" type="checkbox"/>	County

CANCEL SAVE CHANGES

**Step 8:** You can configure Hospital, DRG and Discharge, and Conditions and Diagnosis filters by clicking on the “Filters” subtab. Here you will see three filtering groups, where you will need to select the checkbox for the associated attribute you would like included in your report.

- **Hospital Filters :** Hospital Name, Category, ZIP Code, Region, All Hospitals
- **DRGs and Discharges Filters:** Major Diagnosis Category (MDC), Diagnosis Related Group (DRG), Condition, Procedure, All Discharges Combined
- **Conditions and Diagnosis:** Condition, All Diagnoses Combined

**Step 9:** Report columns can be configured for specific reports. Click on the checkbox associated with the columns you would like to be included in your reports. Examples of columns include “Number of Discharges” and “Mean Cost in Dollars.” Once you have finished configuring your report, select the Preview Sample Template tab as shown in [Screenshot 41](#).

### Screenshot 41: Preview Sample Template Tab

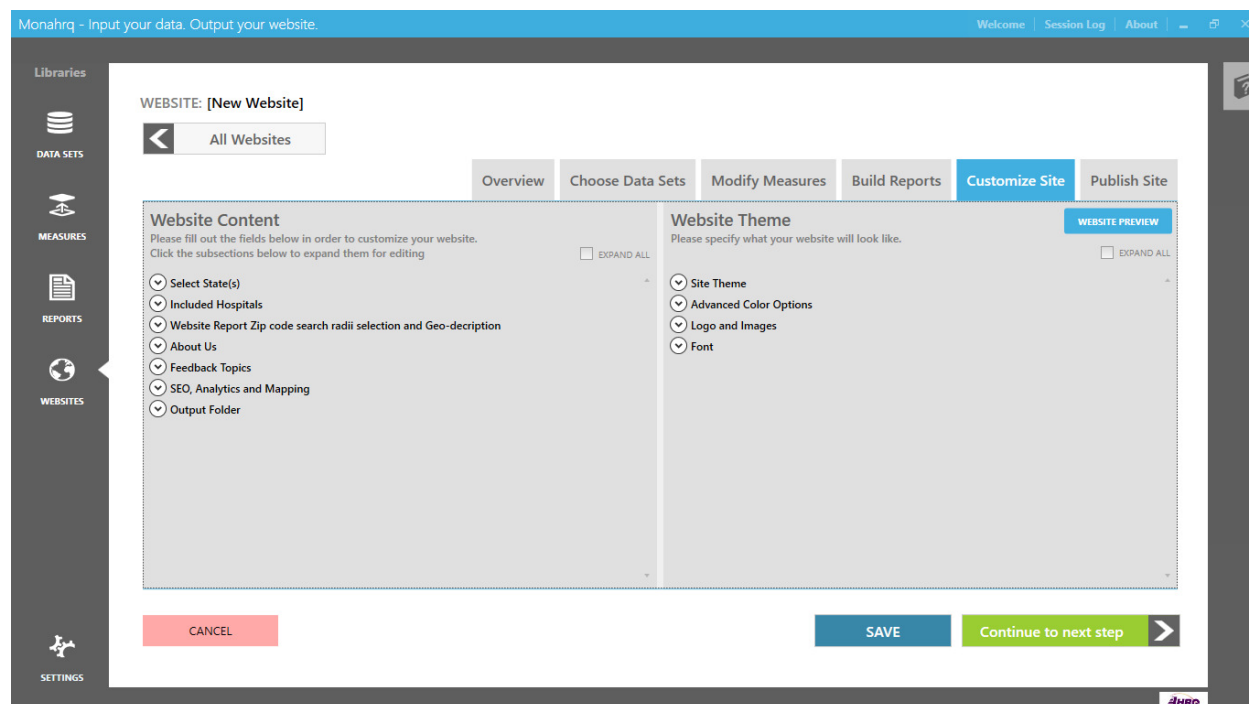
The screenshot displays the Monahrq web application interface. The top navigation bar includes 'Monahrq - Input your data. Output your website.', 'Welcome', 'Session Log', and 'About'. A left sidebar contains icons for 'Libraries', 'DATA SETS', 'MEASURES', 'REPORTS', 'WEBSITES', and 'SETTINGS'. The main content area is titled 'REPORT TEMPLATE' and features a 'Create new report based on this template +' button. Below this, there are three tabs: 'Name and Description', 'Report Attributes', and 'Preview Sample Template' (which is active). The 'Preview Sample Template' tab shows a 'Hospital Comparison Report - Icons' for 'Quality'. It includes a 'Back to previous report' link, a 'Compare To' dropdown set to 'National Average', and a 'Data Type' dropdown set to 'Symbols'. A 'Sample Report' watermark is visible over the data table. The table is organized by 'Childbirth' and 'Practice patterns' (Measures), with columns for 'Facility 1', 'Facility 10', and 'Facility 12'. Each row shows a measure name, a 'Not enough data to report' status, and a performance indicator (Better, Below, or Average) with a corresponding icon. At the bottom, there are 'Composites' and 'CANCEL'/'SAVE CHANGES' buttons. The AMRQ logo is in the bottom right corner.

Measure	Facility 1	Facility 10	Facility 12
Percentage of births delivered by cesarean section	Not enough data to report	Better (Yellow icon)	Better (Yellow icon)
Uncomplicated vaginal birth performed after 36 weeks	Not enough data to report	Below (Purple icon)	Below (Purple icon)
First birth delivered and tested as Cesarean	Not enough data to report	Better (Yellow icon)	Better (Yellow icon)
Normal birth after a previous Cesarean	Not enough data to report	Average (Grey icon)	Below (Purple icon)
Births of twins	Not enough data to report	Facility 10	Facility 12
Births with a birth injury or infection	Not enough data to report	Average (Grey icon)	Better (Yellow icon)
Obstetric injury after a vaginal delivery with medical intervention	Not enough data to report	Average (Grey icon)	Average (Grey icon)
Obstetric injury after vaginal delivery without medical intervention	Not enough data to report	Average (Grey icon)	Average (Grey icon)

## CHAPTER 7. CUSTOMIZING AND PUBLISHING YOUR WEBSITE

The process of creating, customizing, and publishing a MONAHRQ® website is managed through the “Website Creation” component of the software. The Customize Site screen allows you to modify various aspects of your website, including the theme, color options, logos and images, fonts, and banners ([Screenshot 42](#)).

### Screenshot 42: Customize Site Screen



### 7.1 Customizing Your Website—Website Content Section

Using the tools on the Customize Site screen, you can input and tailor content for your MONAHRQ-generated website. The screen is divided into two main sections: “Website Content” and “Website Theme.” When accessing the screen, all subsections are collapsed by default. To begin the website customization process, select the “Expand All” icon in the upper right corner of the screen to expand all subsections at once, or scroll down the pane and expand the specific subsections to edit.

At any time, you can select the “All Websites” button to load the listing screen of all of the websites you have generated. You can also choose datasets, define measures, and build reports by selecting the appropriate tab at the top of the screen.

#### 7.1.1 Assigning States, ZIP Code Radii, Hospitals, and Geographic Descriptions

In this subsection, you will assign one or more of the States for which you are generating your website and reports. This is similar to selecting States when defining regions and managing hospitals as part of the managing datasets step discussed earlier (see [Section 4.3](#)). The State value selected when defining the region in the Hospitals tab will be displayed as a default value. However, you can add additional States for your generated website. MONAHRQ requires that you select at least one State from the multiselect dropdown menu ([Screenshot 43](#)).

### Screenshot 43: State, Radii, Hospital Selection, and Geographic Description Detail

The screenshot shows a web interface for customizing a website. At the top, there is a navigation bar with a back arrow and the text 'All Websites'. Below this, there are two tabs: 'Overview' and 'Choose Data Se'. The main content area is titled 'Website Content' and includes instructions: 'Please fill out the fields below in order to customize your website. Click the subsections below to expand them for editing'. There is an 'EXPAND ALL' checkbox. The first subsection is 'Select State(s)', which has a dropdown menu currently showing 'Vermont'. The second subsection is 'Included Hospitals', which has a blue button labeled 'CLICK TO VIEW AND CHANGE'. The third subsection is 'Website Report Zip code search radii selection and Geo-decription', which has a dropdown arrow.

You must also identify a ZIP Code radius filter available for use by the End User when searching for hospitals. The “Select State” search allows the user to identify hospitals within a specific distance (1 to 200 miles) from the ZIP Code searched.

Within this stage of defining your generated website, you can select the hospitals to appear in your website and reports. By default, all hospitals in your MONAHRQ database will be included in your website and reports. To view and change the hospitals that will be included in your reports, in the Website Content section, first click on the arrow to the left of “Included Hospitals” to expand the section for editing. Then, click on the “Click to View and Change” button to launch a popup window ([Screenshot 44](#)) containing a list of all hospitals in your database that will be included in your reports by default.

To customize the list of hospitals to include in your website, unselect the hospitals you do not want to include to suppress them in the generated output and then select the hospitals you want to include. You can use the “Filter by” dropdown box to allow you to filter the hospitals by various conditions. You should also be able to override hospital’s CCR values for the website on this screen.

#### Screenshot 44: Hospital Selection Popup Window Detail

**Included Hospitals:**  
Select Hospitals to include in each report.

FILTER BY:  # of Hospitals: 16

<input checked="" type="checkbox"/>	HOSPITAL NA	LOCAL ID	CMS ID	STATE	ZIP CODE	CCR
<input checked="" type="checkbox"/>	Central Vermont Medical Center	0	470001	Vermont	05641	0.74192
<input checked="" type="checkbox"/>	Fletcher Allen Hospital Of Vermont	0	470003	Vermont	05401	0.58913

A geographic description must also be added for all generated websites such as the State (or States) for which the website is reporting health measures. This description will be used as a prefix to the “Help” email subject text. For example, the default subject line will read: [Geographic description] “MONAHRQ Website Help.” The text entered will also be used to populate the “Compare To” dropdown menu on the generated websites Quality Reports screens ([Screenshot 45](#)).

#### Screenshot 45: “Compare To” Screen

Childbirth

Practice patterns

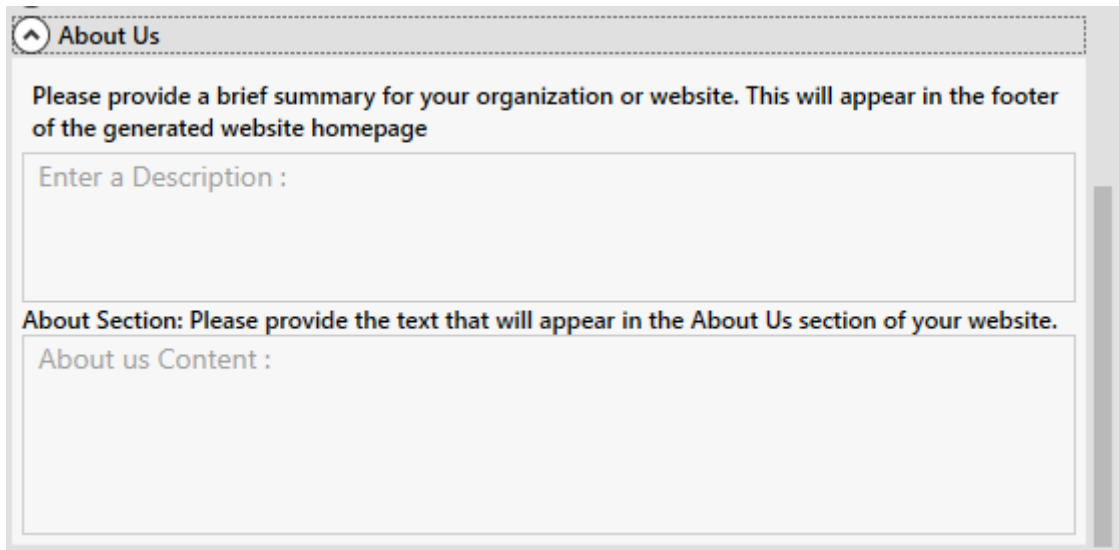
Sort by:  Compared To:  Display Type:  [Select Report to Copy](#)

Select hospitals to compare	Hospital Name	Compared To	Rate of births (es) that are C-sections	Uncomplicated vaginal births performed after C-section	First birth deliveries performed as C-section	Vaginal birth after a previous C-section
<input type="checkbox"/>	Facility 46	National Average	Better than average	Better than average	Better than average	Better than average
<input type="checkbox"/>	Facility 24	In My State	Better	Better	Better	Better

#### 7.1.2 Adding “About Us” Content

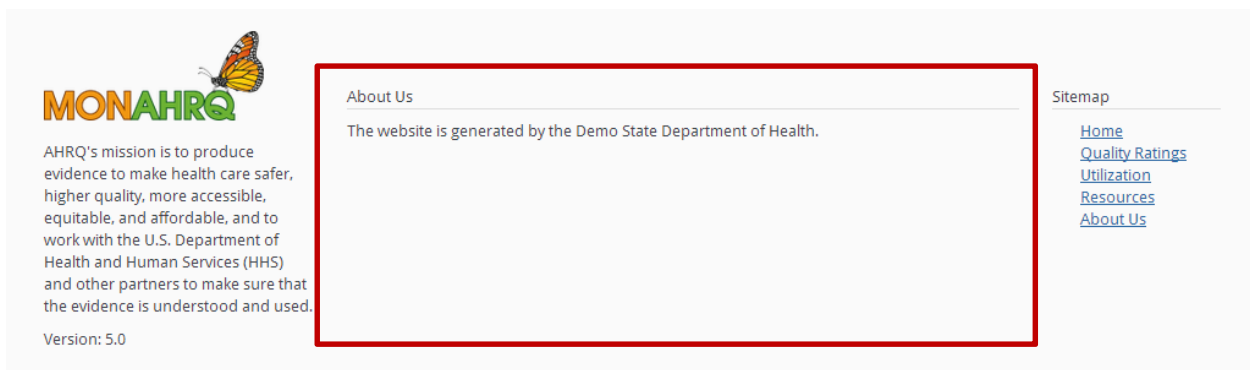
The “About Us” subsection allows you to provide content describing your organization in two sections of your generated website ([Screenshot 46](#)). Summary detail content will be displayed at the bottom of your generated website’s home page, while a more detailed “About Us” version of the content can be displayed in the “About Us” section of your generated website.

#### Screenshot 46: Create “About Us” Footer and “About Us” Section Content Detail



The “About Us” footer content can be entered in the top text box, which allows up to 500 characters. This content will appear as the footer of your MONAHRQ website’s home page. You are not required to provide any content in this field. If the field is left blank, the “About Us” footer section on the home page will not be displayed. During the dependency check of the website generation process, a warning message will alert you that the field is blank, and you will have the option to update the field ([Screenshot 47](#)).

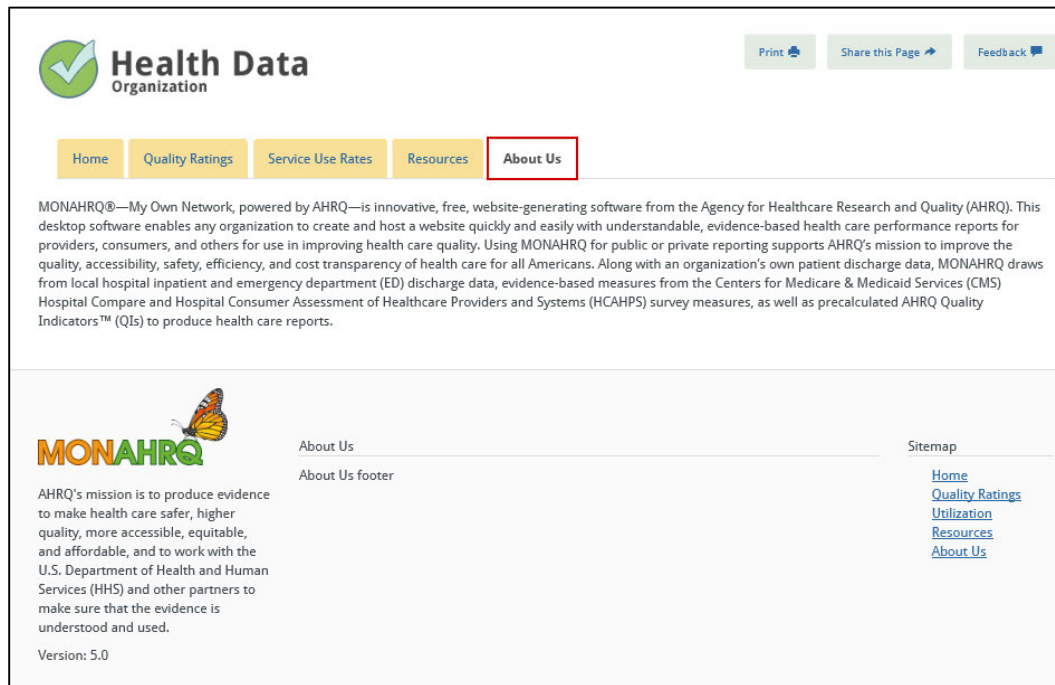
#### Screenshot 47: Generated Website “About Us” Footer Detail



Similar to the “About Us” footer content, you can enter text that will appear in the “About Us” section of your website. You can enter 4,000 characters in this text box to best describe your organization and website-related objectives ([Screenshot 48](#)). If this field is left blank, the “About Us” page and corresponding tab in the generated website will not be produced.



## Screenshot 48: “About Us” Page

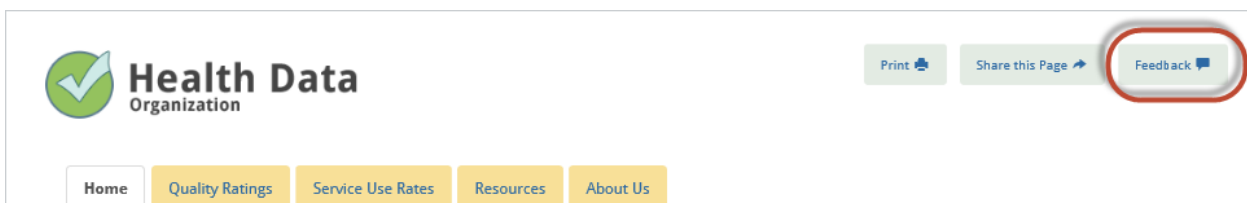


### 7.1.3 Setting-Up Feedback Topics

Within your generated website, End Users will be able to provide feedback on reporting topics and general website usability issues. For example, End Users may be able to download a feedback survey that you enable, or they may be directed to an online survey created by your organization. The feedback topics and survey features can be found under the Feedback section of the website ([Screenshot 49](#)). MONAHRQ 5.0 contains out-of-the box feedback topics related to reporting and general website usability issues, including the following:

- Quality Reports and Measure Details
- Utilization Reports
- Avoidable Stays Reports
- Data Accuracy
- Page Not Found Issue
- Other Website Issue

## Screenshot 49: MONAHRQ-Generated Website Feedback Button Detail

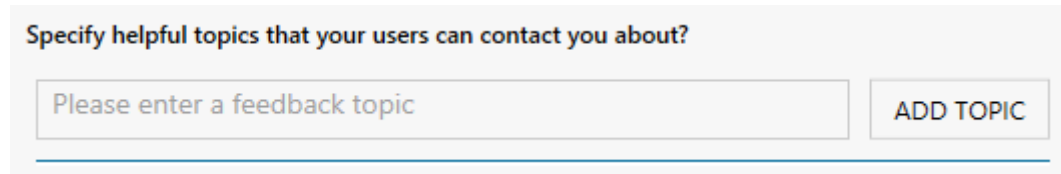


In this subsection, you can add a help topic to the dropdown box of feedback topics that are displayed to the End User. If you choose not to enter any feedback topics or delete all of the topics, the generated website will not show the dropdown box for the End User. When an End User selects the email feedback

function, a list of feedback topics will be provided. If you choose not to enter any feedback topics, the email client will provide a default subject line of “*MONAHRQ Website Help*” instead of providing feedback topic options.

To add topics, enter the feedback topic in the text box and click the “Add Topic” button ([Screenshot 50](#)). This will add the feedback topic below the text. You have the ability to add multiple feedback topics.

#### **Screenshot 50: Feedback Topics Detail**



A “Feedback Recipient Email Address” input box is available for you to add an email address for the recipient or mailbox that will be receiving the feedback ([Screenshot 51](#)). If this field is left blank, the “Feedback” button on the generated website will not be shown.

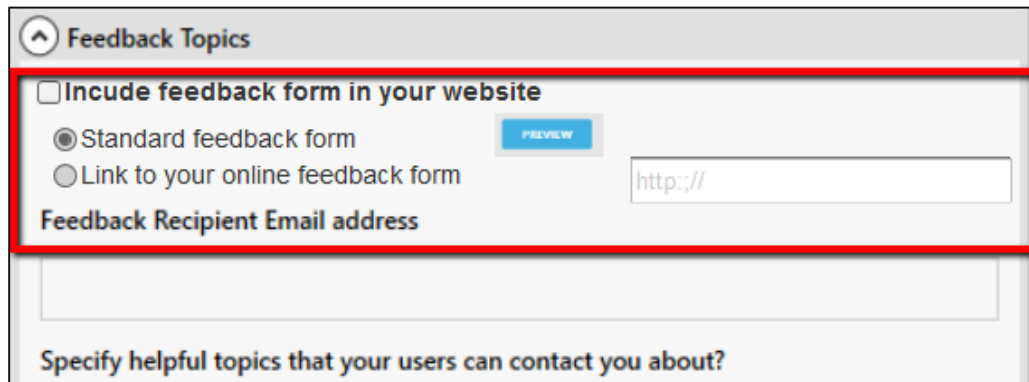
To launch the email client, End Users can choose a topic and click the “Submit” button. The subject line in the email will indicate the selected topic. For example, it may read “[*Geographic Description Text*] *MONAHRQ Website Help: Utilization Report.*”

The feedback survey feature provides two approaches for receiving feedback from website users. The first step is to determine if you would like to offer a survey option to website users. You can enable a survey by clicking the checkbox next to “Include feedback form in your website” ([Screenshot 51](#)). The two survey approaches are discussed below.

**Standard feedback form:** The downloadable form will be in Microsoft® Word® format, which the End User will complete and submit via the contact information you provide on the form. The standard feedback form document file will be included in the MONAHRQ 5.0 software package and can be edited and customized based on your organization’s needs. To customize the feedback form, follow the steps below:

- Step 1: Click “Preview,” which opens the survey in Microsoft Word format.
- Step 2: Edit the survey to customize it and save it with the name “endusersurvey.doc” on your local machine. It is important to name this file as suggested here or else it will not be link it properly in your generated website.
- Step 3: Once you have generated your website, replace this file by going to “%websiteRoot%\Data\Footer\” folder of the generated website.
- Step 4: Link to your online feedback form: Enter the URL to an online survey that has been established by your organization. The link to the online survey will be displayed in the Feedback section of your generated website.

### Screenshot 51: Feedback Survey Configuration

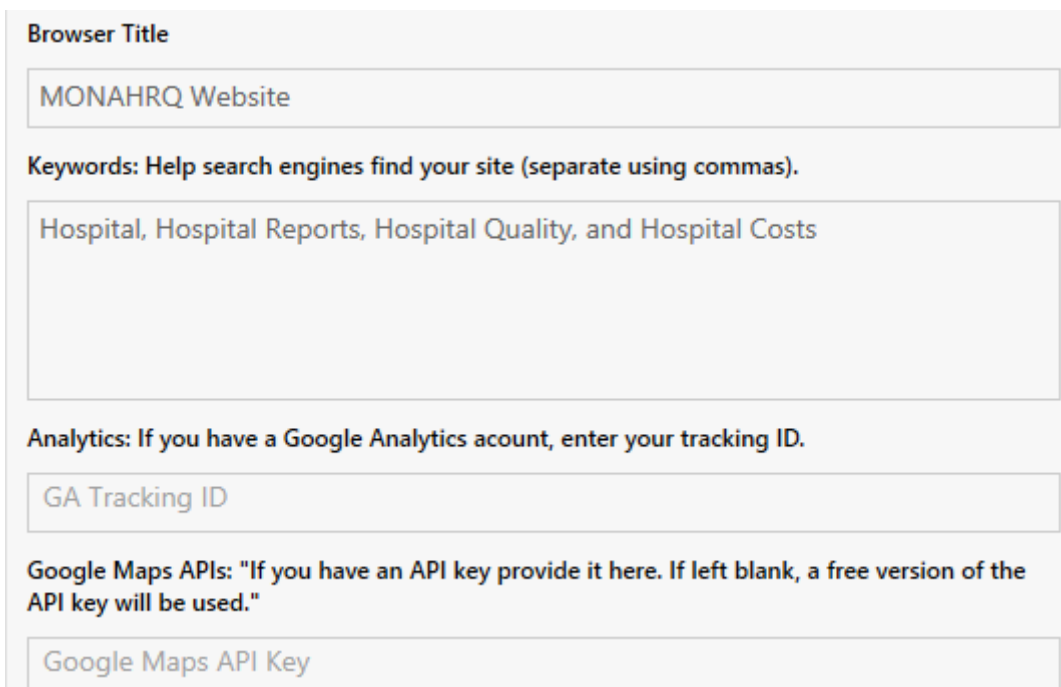


A screenshot of the 'Feedback Topics' configuration window. A red rectangle highlights the 'Include feedback form in your website' section. This section contains two radio buttons: 'Standard feedback form' (selected) and 'Link to your online feedback form'. To the right of the 'Link to your online feedback form' option is a text input field containing 'http://'. Below these options is a text input field labeled 'Feedback Recipient Email address'. At the bottom of the window is a text input field with the placeholder text 'Specify helpful topics that your users can contact you about?'.

#### 7.1.4 Entering Keywords, Analytics, and Mapping Accounts

In this subsection, you will be required to enter a browser title ([Screenshot 52](#)). You also have the option of entering keywords (to help search engines find your site), as well as Google analytics (see [Appendix M](#)) and Google Maps APIs.

### Screenshot 52: Search Engine Optimization, Analytics, and Mapping Detail



A screenshot of the 'Search Engine Optimization, Analytics, and Mapping Detail' configuration window. It contains several input fields: 'Browser Title' with the value 'MONAHRQ Website'; 'Keywords: Help search engines find your site (separate using commas)' with the value 'Hospital, Hospital Reports, Hospital Quality, and Hospital Costs'; 'Analytics: If you have a Google Analytics account, enter your tracking ID.' with the value 'GA Tracking ID'; and 'Google Maps APIs: "If you have an API key provide it here. If left blank, a free version of the API key will be used."' with the value 'Google Maps API Key'.

The “Browser Title” is a required field. Text entered here will be displayed in the browser’s title bar. The default value of “MONAHRQ Website” will be displayed in the box until you update this field with your own text to customize your website.

The “Keywords” text box allows you to add specific keywords to help target the search results of your website. When entering keywords into the text box, you will need to separate the keywords by commas.

MONAHRQ allows you to use Google Analytics and Mapping appliances. If you have a Google Analytics account, you can enter your tracking ID into the “Analytics” text box. Your website will then be included in your Google Analytics reporting dashboard.

A Google Maps API key can be entered into the “Google Maps APIs” text box if you have access to an API account and key. Integrating MONAHRQ with your API will result in your website displaying Google Maps. An example API key is 345YTZ984GHDET.

### 7.1.5 Output Folder

The last subsection in the “Website Content” section identifies where your generated website files will be written and stored ([Screenshot 53](#)).

#### **Screenshot 53: Output Folder Detail**



The default folder location will be your “Documents” folder (for example: *C:\Users\[logged in User Name]\Documents*). If you want to change the default location, you can select an alternate folder by clicking on the “Browse” button next to the Output Folder textbox. Note: You will not be able to type directly into this text box.

## 7.2 Customizing Your Website—Website Theme Section

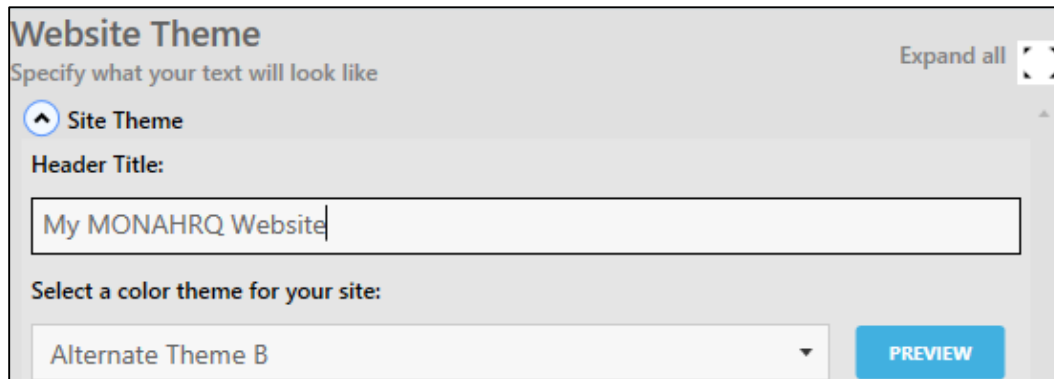
You can use the “Website Theme” section of the Customize Site screen to customize the look and feel of your generated website. Similar to the “Website Content” section, click on “Expand all” at the top of the screen to expand the subsections and configure your website’s theme, color schemes, fonts, and upload logos and home page images ([Screenshot 54](#)).

#### **Screenshot 54: Customize Website Theme Detail**



### 7.2.1 Entering Home Page Website Themes

**Screenshot 55: Selecting Website Theme Detail**

The screenshot shows a configuration window titled "Website Theme" with a subtitle "Specify what your text will look like". In the top right corner, there is an "Expand all" button with a double arrow icon. Below the title, there is a section header "Site Theme" with a small upward arrow icon to its left. Underneath, the label "Header Title:" is followed by a text input field containing the text "My MONAHRQ Website". Below the text field, the label "Select a color theme for your site:" is followed by a dropdown menu currently showing "Alternate Theme B". To the right of the dropdown is a blue button labeled "PREVIEW".

After selecting your website color theme, you can click the “Preview” button to launch a popup screen showing a sample home page with the color scheme you selected ([Screenshot 55](#)). You may choose to preview all four themes to determine the best fit for your website.

MONAHRQ also requires you to enter a header title that will be displayed on the home page of your generated website, as shown in [Screenshot 56](#). You can enter up to 100 characters in the text box provided.

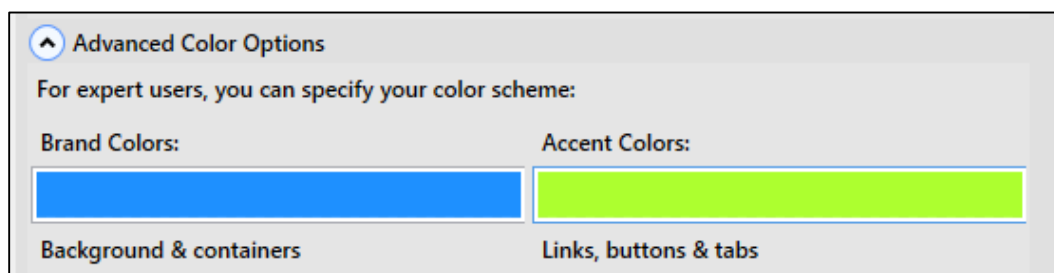
**Screenshot 56: Generated Website Header Title Detail**



### 7.2.2 Selecting Advanced Color Options

If you do not wish to use standard colors, you may choose a custom color scheme for your website ([Screenshot 57](#)). The standard color schemes are Section 508 compliant.

**Screenshot 57: Advanced Color Options Detail**

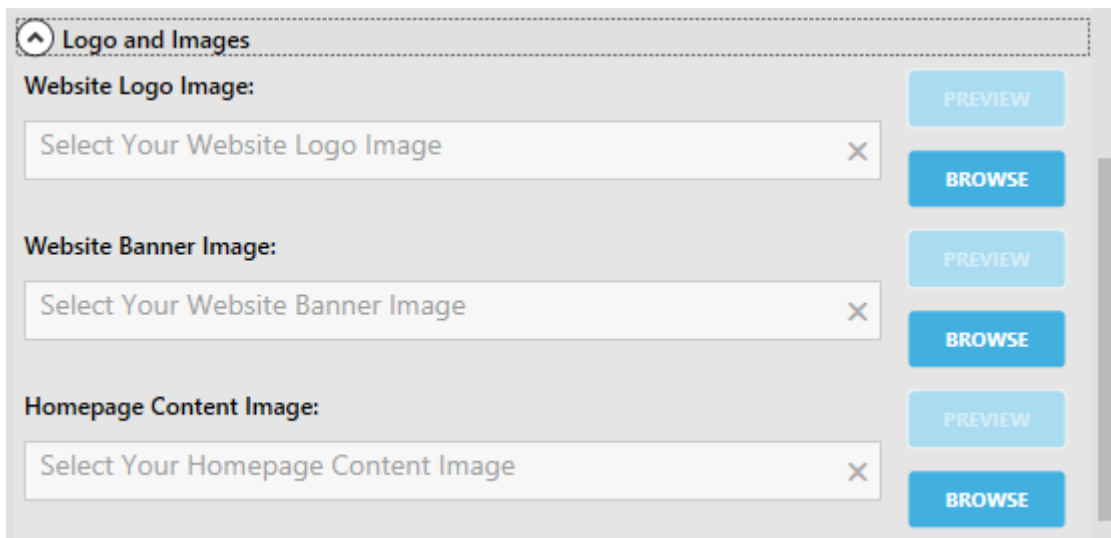
The screenshot shows a configuration window titled "Advanced Color Options" with a subtitle "For expert users, you can specify your color scheme:". Below the subtitle, there are two columns. The left column is headed "Brand Colors:" and contains a blue rectangular color swatch with the text "Background & containers" underneath it. The right column is headed "Accent Colors:" and contains a bright green rectangular color swatch with the text "Links, buttons & tabs" underneath it.

MONAHRQ will provide default Brand and Accent color schemes. The “Brand Color” button displays the background color of the site theme you selected. The links, buttons, and tabs on your website are represented by the “Accent Color.” You have the option to change the “Brand Color” or “Accent Color,” which will override any color theme previously selected. When you click on either button, a color selection box will appear. Click the desired color box, which will update the “Brand Color” or “Accent Color” box.

### 7.2.3 Displaying Logos and Images

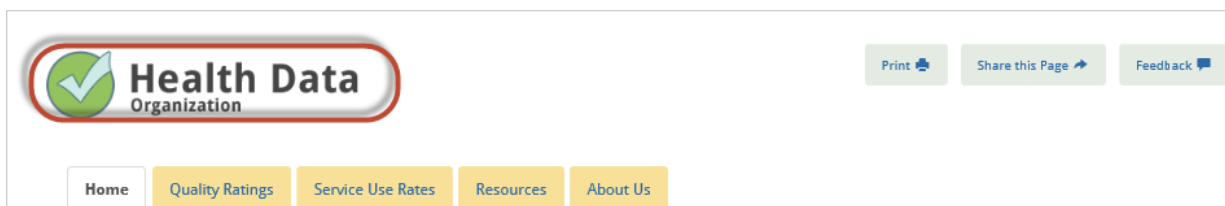
You can display a logo and up to two images on the home page for your organization’s website ([Screenshot 58](#)). The software provides a default logo and two home page images.

#### **Screenshot 58: Logo and Images Detail**

A screenshot of a web application interface titled "Logo and Images". It contains three sections for image selection: "Website Logo Image", "Website Banner Image", and "Homepage Content Image". Each section has a text input field with a placeholder "Select Your [Image Type] Image" and a close button (X). To the right of each input field are two buttons: "PREVIEW" and "BROWSE".

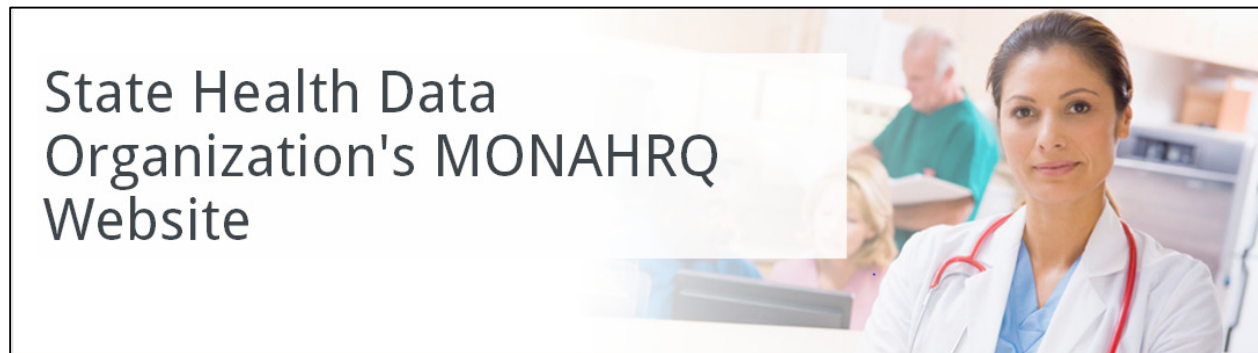
The default website logo image, as shown in [Screenshot 59](#), can be overridden with a logo file provided by your organization. The recommended image size is 450px wide and 200px tall. To upload your custom logo, click the “Browse” button to select an image from your local drive or network. This will replace the default logo with the newly selected image.

#### **Screenshot 59: Website Logo Detail**



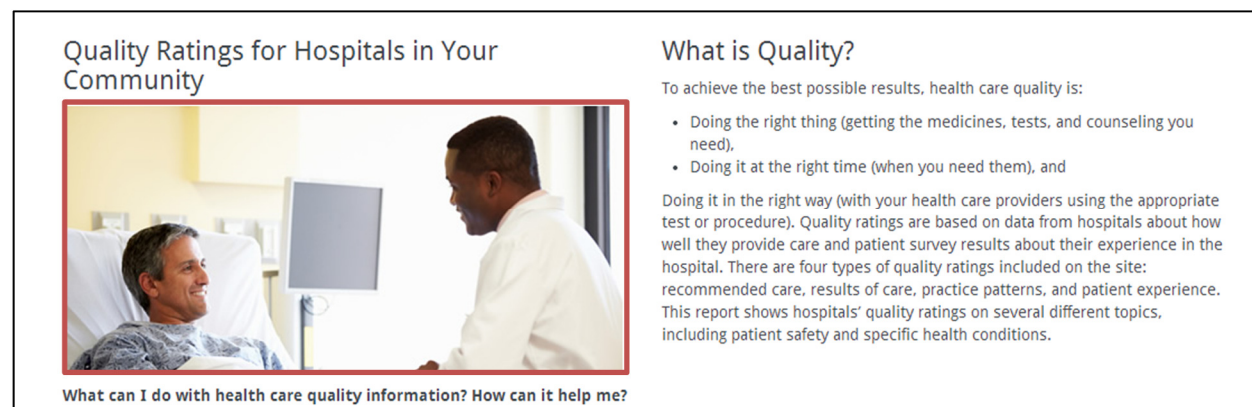
The website banner image is the main image displayed below the reporting tabs and header title ([Screenshot 60](#)). You can override the standard image with a custom image that represents your organization or audience. Similar to uploading a logo, click the “Browse” button to select an image from your local drive or network. The recommended image size is 900px wide and 350px tall.

### Screenshot 60: Website Banner Image Detail



The home page content image is smaller than the website banner image, and the subject matter can be related to information you are displaying on your website ([Screenshot 61](#)). Similar to the website banner image, the software displays a standard image that can be overridden. Use the “Browse” feature to locate the image file on your local drive or network. The recommended image size is 450px wide and 350px tall.

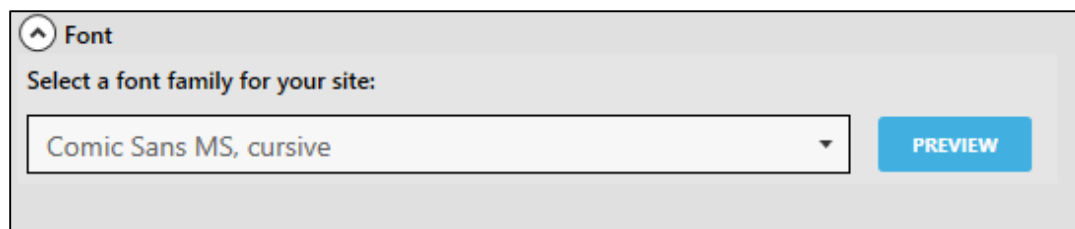
### Screenshot 61: Home Page Image Detail



#### 7.2.4 Selecting Fonts

MONAHRQ uses the Droid Sans, Arial, and Sans-Serif font family as the default on generated websites. However, you have the ability to choose between 11 standard font families to override the default font family. To select a new font, click the single-select dropdown menu to review the available fonts. After a selection is made, click on the “Preview” button to launch a popup window displaying sample content in the selected font ([Screenshot 62](#)).

### Screenshot 62: Website Font Selection Detail

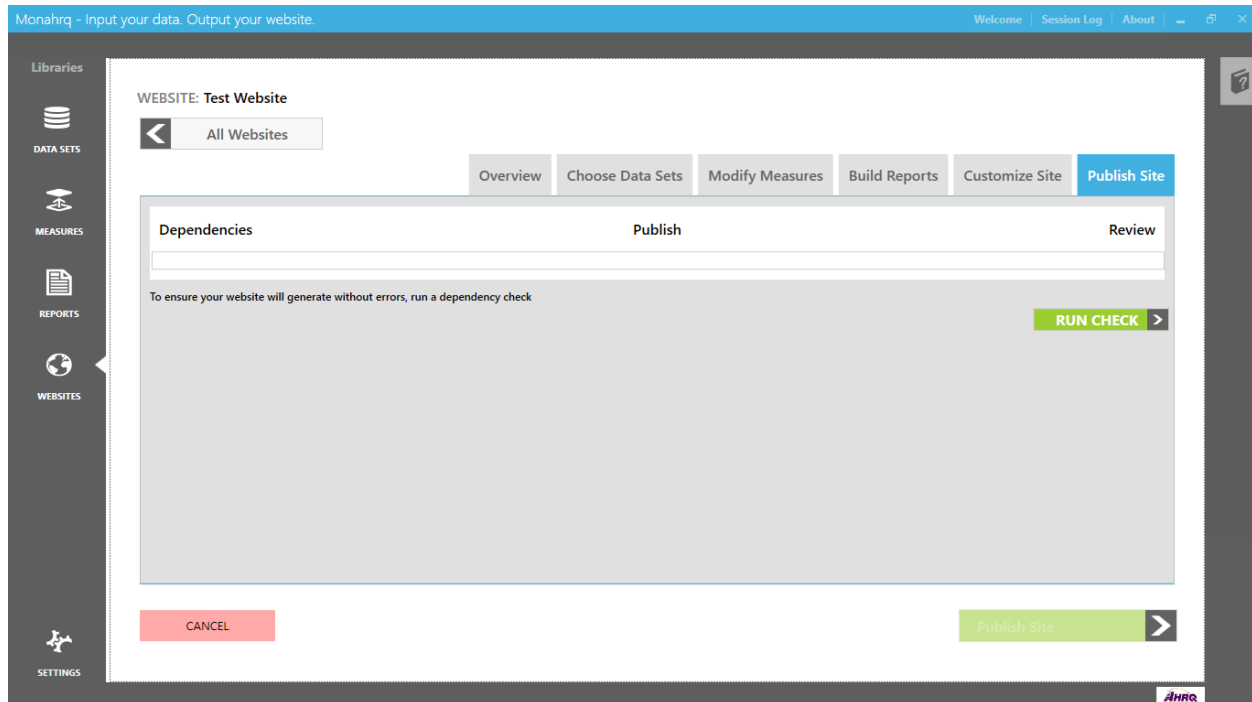




## 7.3 Publishing Your Website

Once you are finished customizing and configuring your website content and color theme, you can complete the website generation process through the “Publish Site” wizard process ([Screenshot 63](#)). During this process, you will complete three steps, which include running a dependency check, publishing your site, and reviewing it.

### Screenshot 63: Publish Website Screen

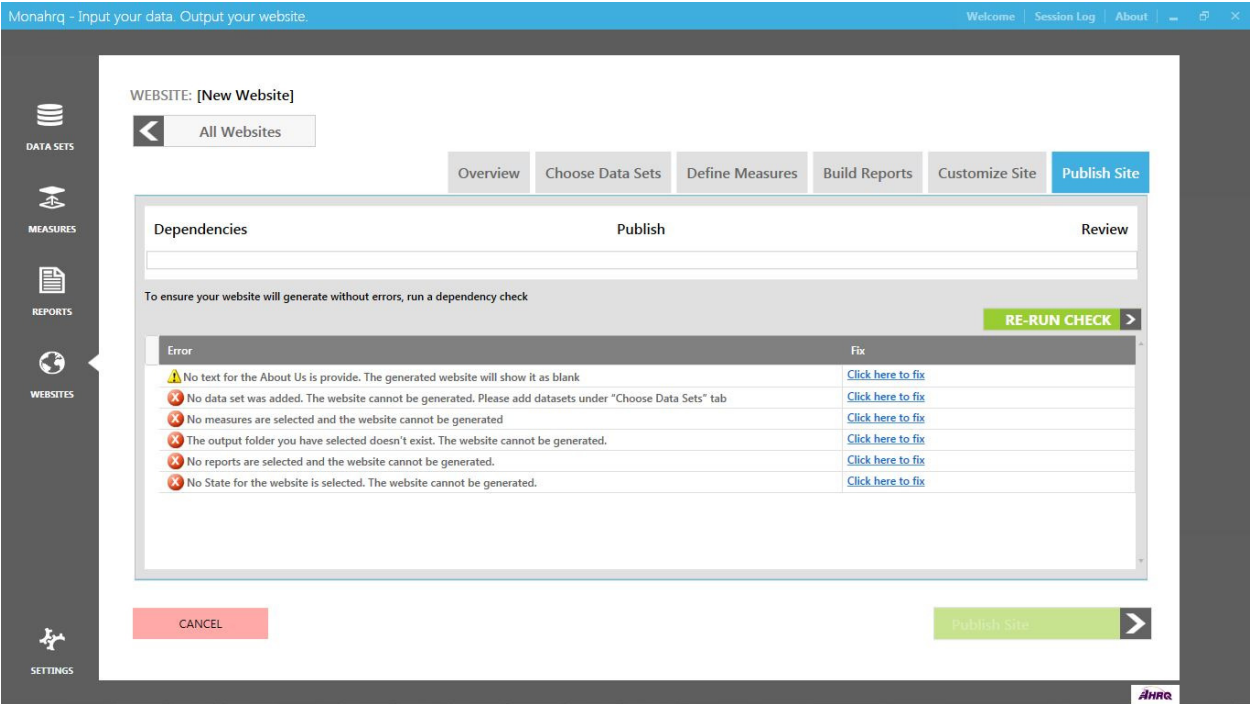


The first step in publishing a new website or regenerating an existing website is the dependency check, which identifies errors or warnings related to how your website has been configured. At this point in the process, the progress bar will be highlighted green in the “Dependencies” progress bar. To begin the dependency check, click on the “Run Check” button.

A dependency check results log will be displayed, identifying the errors and warnings detected, as shown in [Screenshot 64](#). The warnings are shown with an orange warning icon. The “Publish Site” button will be disabled until all “Error” items are resolved. A full list of errors and warnings can be found in [Appendix O](#). After you have resolved all of the errors, the label for “Run Check” button will change to “Re-Run Check,” allowing you to run the dependency check again.

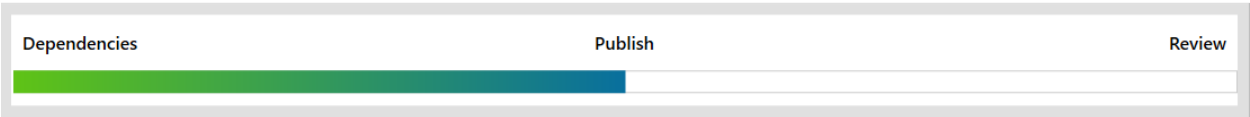


Screenshot 64: Dependency Check and Log Detail Screen



Once all errors identified in the dependency check log have been resolved, the “Publish Site” button will be enabled. The progress bar will reflect that the dependency step is complete and you are now in the “Publish” stage, as shown in [Screenshot 65](#). You can now move on to publishing your website.

Screenshot 65: Progress Bar Detail

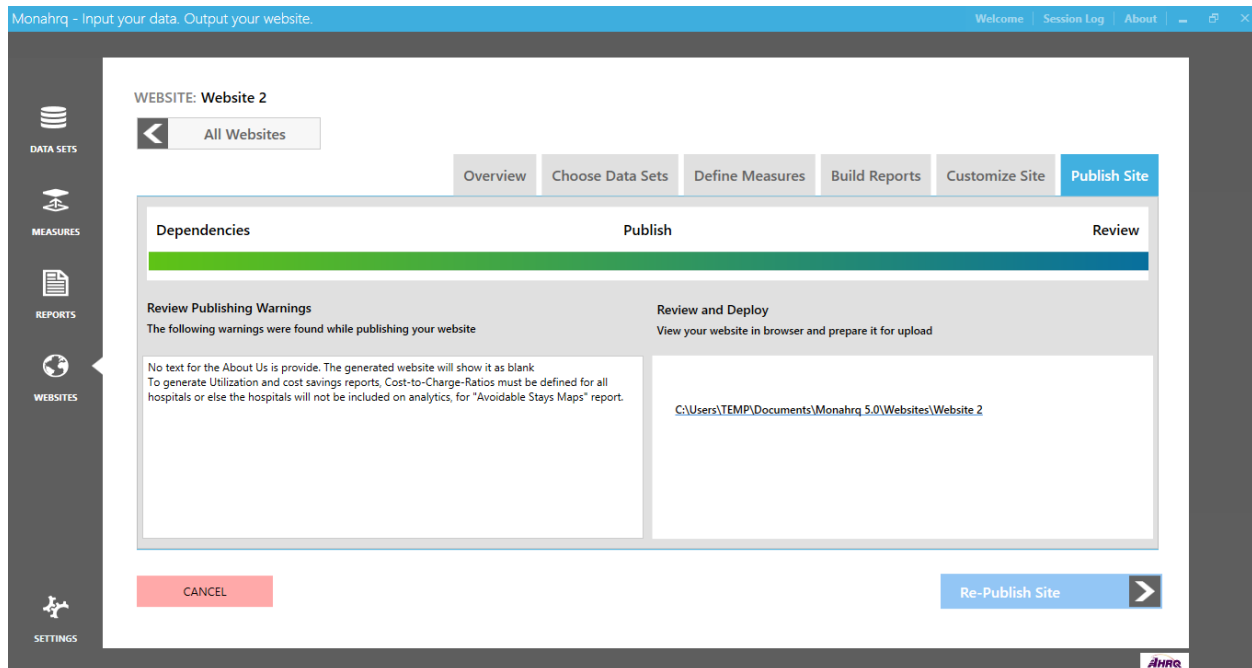


This process will write your website files to the output folder you selected earlier in the “Website Content” section of the Customize Site screen. If the output folder already contains existing content, the software will display a warning message. If you choose to continue to publish your site in the output folder, all existing content files will be overwritten.

7.4 Publishing Site Screen

The final step in the process for publishing your website involves reviewing any publishing errors and then reviewing the website you published ([Screenshot 66](#)). The Publish Site screen identifies the final step you are working on, by displaying the progress bar. The Publish Site screen is divided into two sections: “Publishing Errors” and “Review and Display.”

## Screenshot 66: Review Published Site Screen



The system generates a list of unresolved warnings for review, which are displayed in the “Publishing Errors” section. You must resolve all identified errors prior to publishing your website. Depending on the nature of the warnings, you may or may not choose to resolve the warnings.

The software will generate warning messages related to library- and website-level updates, including the following:

- Library-Level Updates
  - Any update to any of the datasets (that are included for the website) in the “Datasets” Library
  - Any update to any of the measures’ attributes (that are included for the website) in the “Measures” Library
  - Any update to any of the reports’ attributes (that are included for the website) in the “Reports” Library
- Website-Level Updates
  - Any updates to the dataset selections for the website
  - Any updates to the measure selections for the website
  - Any updates to the measures’ attributes within the context of the website
  - Any updates to the reports selections
  - Any updates to any single website attribute under the “Customize Site” tab

The “Review and Deploy” section of the Publish Site screen allows you to view your website in a browser. A link will be displayed in the “Review and Deploy” section with the path to your current website folder. If you make any changes to an existing published website, a warning message will appear, notifying you that your data, configurations, or file path has changed since you last published your website.

Your newly created or existing website can be re-published after dataset, measure, reporting, or site customization changes are made. To re-publish your website and produce a new set of content files in your output folder, click on the “Re-Publish Site” button. A warning message will appear, and you will need to confirm whether to re-publish the site. If you decide to re-publish the website and click “Yes,” the dependency check process will be initiated. At this point, the dependency check window will be loaded, and you will be required to complete the three steps in the “Publish Site” process, as discussed above.

## CHAPTER 8. SETTINGS

### 8.1 Database Manager Settings

Access the “Database Connection” input screen ([Screenshot 67](#)) by clicking on the “Settings” button. Within this input screen, enter valid database information to complete the connection setup process and launch the application. If valid database information is not entered, the MONAHRQ application will not launch. Once inputs are saved, the fields on the screen will be prepopulated when accessing the “Database” screen in the future.

If the database connection has already been established, the “Process Log” text area will show the recent database creation logs. If no database has been created, the section on the right side of the screen will be blank. This section will also display the process log in real time when you create your database.

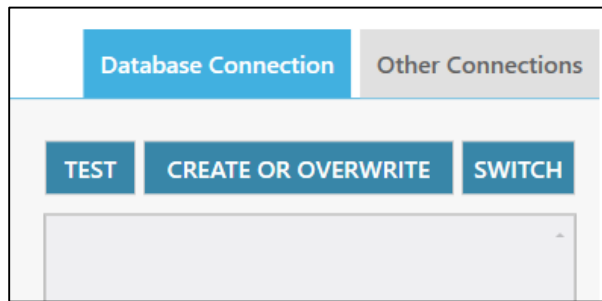
#### Screenshot 67: Database Connection Screen

The “Server Name” field captures the name of the server to which you are connecting the application. If connecting to a network server, input \\[Server Name]. This is a required field, and you will receive a validation message if the field is blank.

The “Database Name” field captures the name of the database being created or updated. This is a required field, and you will receive a validation message if the field is blank.

Next, select one of the two “Authentication Type” radio button options: “SQL Server” or “Integrated Security.” If “SQL Server” is selected, the “User Name” and “Password” input boxes will be enabled, and these credentials must be established. If “Integrated Security” is selected, you will not be required to create a user name and password; these fields will remain disabled.

## Screenshot 68: Test, Create, and Delete Function Button Details



Once the required information has been entered into the input boxes shown in [Screenshot 67](#), the next step is to test the database connection. This will confirm that the SQL Server instance name, the name of your database, and the authentication type is valid and there is a connection between the application and the database. To execute this test, click the “Test” button ([Screenshot 68](#)). If the connection fails, an error message will be displayed, identifying what input needs to be corrected.

When creating a new database, the system validates whether there is an existing database with the same name. If a database with the same name is identified, you will receive a message prompting you to either click “OK” or overwrite the existing database or to choose not to overwrite the database by clicking “Cancel.”

If all required conditions are met, you will receive a message notifying you that the database can be created after you approve to proceed. Clicking on the “Yes” button will initiate the database creation process. Once the database creation process is completed, click “Done” to save the input information to the database.

You can delete an existing database, which will remove any settings established and any data that you have uploaded. To delete the database, click the “Delete” button.

To establish a connection to the AHRQ QI database, click the “Other Connections” tab to launch the database connection screen. Complete the required server and database name fields, and then save and close the screen to establish the connection.

## 8.2 Database Creation Process Log

Within the Database Manager screen, you can access the database creation log, which provides information for each base data file, including the number of rows loaded and processing times.

## 8.3 Session Logs

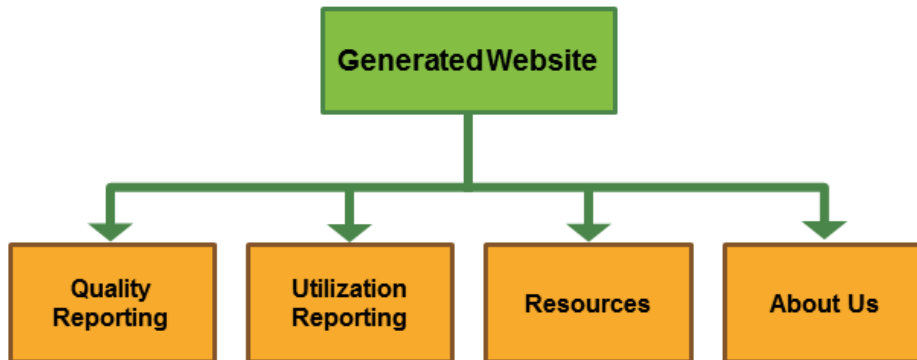
In order to troubleshoot technical issues effectively, you can review session logs that capture errors related to general operations and publishing. The individual session logs can be stored by date on your machine in the Documents folder or in another repository within your organization. The session log can be accessed by clicking the “Session Log” menu item on the top right corner from within MONAHRQ. The Session Log menu does not maintain a history of logs; it only reports on the last day for which there was activity. The recommended number of logs for you to maintain in your local directory 10 days of logs. The following session logs are generated by MONAHRQ:

- Environment, such as permission- or network-related issues, website and website publishing

## CHAPTER 9. WEBSITE ORGANIZATION

All MONAHRQ-generated websites share a similar structure, where the End Users can view high-level information on quality and health measures and select reporting paths to generate their desired reports on the home page. Your generated websites can vary based on the data, measure, report, and website attributes selected during the website creation and publishing processes. The general structure of the generated websites is shown in [Figure 2](#).

**Figure 2: MONAHRQ-Generated Website Site Map**



The first page End Users will see when accessing the MONAHRQ-generated website is the home page ([Screenshot 69](#)). In addition to searching for hospitals, health conditions, or topics, End Users can learn what quality is and why it is important, and navigate to additional pages of the website.

**Screenshot 69: MONAHRQ-Generated Website Home Page**



The generated website will reflect the settings, theme, and font styles and image and text content you selected on the Customize Site screen in MONAHRQ before publishing your site.

The home page layout contains three main component areas: (1) a navigation menu to access reporting paths, (2) a hospital search feature, and (3) a section to display content related to health measures, quality, or a topic supporting your objectives.

The website theme, color selections, and fonts are used consistently across all pages of the generated website.

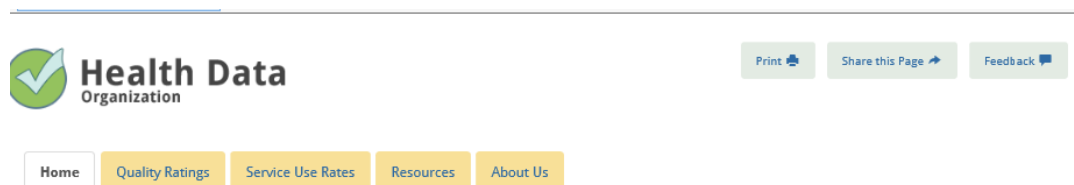
## 9.1 Website Header and Footer Sections

As a part of the website theme, the header and footer sections will remain consistent on all pages of the website. The content in these sections will reflect the configurations and content added when completing the “Customize Site” step of the website generation process in MONAHRQ.

### 9.1.1 Web Page Header

The header contains a logo section and the navigation menu, including Quality Ratings, Usage Data, Resources, and About Us tabs. From these tabs, the End User can view reports or learn more about your organization and topics related to quality and measures.

#### Screenshot 70: MONAHRQ-Generated Website Header



The top right corner of the home page includes “Share this page” and “Feedback” features ([Screenshot 70](#)). When an End User clicks on the “Share” button, the End User’s email program will open, allowing them to easily email a link to the content they were viewing on a given page. This will allow the email recipient to receive a direct link to the specific content the sender was viewing.

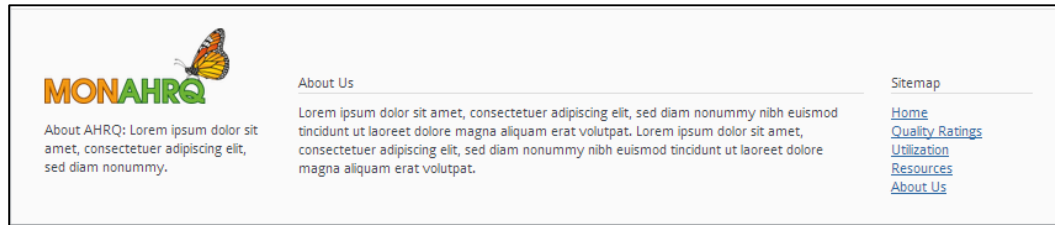
The “Feedback” feature allows End Users to submit feedback to the hosting organization. Once selected, a dropdown menu with various feedback topics will appear. The feedback topics will reflect the configurations you made on the Customize Site screen in MONAHRQ when completing the website generation process. Upon selecting a feedback topic from the dropdown menu and clicking “Continue,” the website user’s default email application will be launched. The subject line of the email will be the dropdown selection, and after an email is drafted, it can be sent to the appropriate contact configured on the Customize Site screen in MONAHRQ. If an End User does not have a default email application on his or her computer, he or she can send feedback directly to the Host User’s organization. It is recommended that Host Users include contact information in the “About Us” section content to allow End Users to contact your organization.

### 9.1.2 Web Page Footer

The footer is a global feature that appears at the bottom of all website pages and includes the MONAHRQ logo, a brief description about AHRQ, a brief description about your organization, and a site map ([Screenshot 71](#)). The site map provides End Users with another means of navigating to the primary

navigation pages by clicking on the provided links. Although the content for “About AHRQ” will be static, the “About Us” content will reflect the text entered on the “Customize Site” screen in MONAHRQ.

#### Screenshot 71: MONAHRQ-Generated Website Footer



## 9.2 Report Generation and Organization Sections

The End User can access the Quality Ratings and Utilization tabs to generate reports based on specific measures and health topics. Information about your organization and other health reporting content can be accessed in the “About Us” and “Resources” tabs, respectively.

### 9.2.1 Quality Ratings

From the Quality Ratings tab in the primary navigation menu, the End User is directed to the Quality Ratings landing page ([Figure 3](#)) where they can search for hospitals, read about what hospital quality ratings are, or choose a health condition or topic to view hospital quality ratings.

**Figure 3: MONAHRQ-Generated Website Hospital Quality Reporting Site Map**





**Screenshot 72: MONAHRQ-Generated Website Quality Ratings Landing Page**

**Health Data Organization**

Print Share this Page Feedback

Home **Quality Ratings** Service Use Rates Resources About Us

**Find Hospitals**  
that provide high quality care in areas that matter most to you:

**Condition or Topic**  
Choose the health condition or topic that's most important to you, and then compare hospital ratings for your particular needs.  
[VIEW RATINGS](#)

**Hospital**  
Browse a list of hospitals by location or type and compare them, or find a specific hospital and see how it rates.  
[VIEW RATINGS](#)

**What is Health Care Quality?**  
Health care quality means that patients, doctors, and health care facilities aim to achieve the best possible results by:

- Doing the right thing (getting you the medicines, tests, and counseling you need)
- Doing it at the right time (when you need them)
- Doing it in the right way (your health care providers using the appropriate test or procedure safely, with no mistakes)

**Quality Ratings**  
Quality ratings are based on data from hospitals about how well they provide care and patient survey results about their experience in the hospital. There are many ways to rate the quality of health care. There are four types of quality ratings included on the site: recommended care, results of care, patterns of how care is delivered, and patient experience. This site shows hospitals' quality ratings on several different topics, including patient safety and specific health conditions.


**Health Conditions & Topics:**  
Quality ratings are organized into topics by health conditions or by different aspects of health care quality, such as patient safety or patient experiences.

- [Childbirth](#)
- [Deaths or returns to the hospital](#)
- [Emergency department \(ED\)](#)
- [Heart attack and chest pain](#)
- [Heart failure](#)
- [Heart surgeries and procedures](#)
- [Imaging](#)
- [Infections](#)
- [Nursing care](#)
- [Other surgeries](#)
- [Patient safety](#)
- [Patient survey results](#)

### 9.2.1.1 Topic or Condition Reporting Path

Clicking on the “VIEW RATINGS” button under “Condition or Topic” ([Screenshot 72](#)) will direct the End User to the Quality Ratings by Condition or Topic page. The End User can build their report by selecting a topic and subtopic from the dropdown menus or refine the report results by selecting the hospital type and geographic parameters by ZIP Code or region ([Screenshot 73](#)).

## Screenshot 73: MONAHRQ-Generated Website Choosing a Topic or Condition Landing Page


**Health Data**  
 Organization

Print
 Share this Page
 Feedback

Home
 Quality Ratings
 Service Use Rates
 Resources
 About Us

Condition or Topic
 Hospital

1 Select Topic  
 Childbirth

2 Select Sub Topic  
 Practice patterns

3 Refine Results  
 Search Type

Childbirth

Practice patterns

Sort by: Hospital Name  
 Compared To: National Average  
 Display Type: Symbols  
 Select Report to Copy

Select hospitals to compare	Hospital Name	Percentage of births (deliveries) that are C-sections	How often there are no complications for mothers who gave birth vaginally when the mother has had a C-section in the past	Percent of women having their first time C-section	How often babies are born vaginally when the mother has had a C-section in the past
<input type="checkbox"/>	Facility 1	Better than average	Below average	Better than average	Below average
<input type="checkbox"/>	Facility 10	Better than average	Better than average	Better than average	Better than average
<input type="checkbox"/>	Facility 11	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report

Clicking on the “Search” button will display a set of quality rating results comparing hospitals within a defined geographic location and hospital type by defined topic ([Screenshot 74](#)).

## Screenshot 74: MONAHRQ-Generated Website Choosing a Topic or Condition Landing Page: Filter Detail

1 Select Topic  
 Childbirth

2 Select Sub Topic  
 Practice patterns

3 Refine Results  
 Hospital Type

4 Hospital Type  
 All

Refine Report

Childbirth

Practice patterns

Sort by: Hospital Name  
 Compared To: National Average  
 Display Type: Symbols  
 Select Report to Copy
 

Select hospitals to compare	Hospital Name	Percentage of births (deliveries) that are C-sections	How often there are no complications for mothers who gave birth vaginally when the mother has had a C-section in the past	Percent of women having their first time C-section	How often babies are born vaginally when the mother has had a C-section in the past
<input type="checkbox"/>	Green Mountain Psychiatric Care Center	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	Facility 48	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	Facility 47	Better than average	Average	Better than average	Average
<input type="checkbox"/>	Facility 45	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	Facility 44	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	Facility 43	Better than average	Better than average	Average	Better than average

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On the right side of the screen, an End User can review patient experience results and all other quality ratings available for the hospital ([Screenshot 74](#)). By clicking on a health condition or topic, the End User will be directed to a report page displaying quality rating symbols for the hospital. There are four quality rating score types: (1) The hospital scored better than average. (2) The hospital scored average. (3) The hospital scored below average. (4) The hospital did not have enough data to report. The quality rating scores are defined below:

- **Better than average**—This quality rating score category uses a yellow upright triangle symbol to indicate that the hospital scored better than average. The symbols will automatically update if the default in the compare dropdown menu is changed from statewide average to national average.
- **Average**—This quality rating score category uses a gray circle symbol to indicate that a hospital scored average. The symbols will automatically update if the default in the compare dropdown menu is changed from statewide average to national average.
- **Below average**—This quality rating score category uses a purple downright triangle symbol to indicate that a hospital scored below average. The symbols will automatically update if the default in the compare dropdown menu is changed from statewide average to national average.
- **Not enough data to report**—This quality rating score category uses a text symbol to indicate that a hospital did not have enough information to report. The symbols will automatically update if the default in the compare dropdown menu is changed from statewide average to national average.

From this page, the End User can select a specific hospital to review by selecting the institution name in the “Find a Specific Hospital” dropdown menu or clicking the name of the institution. Selecting a specific hospital will display the hospital profile page, as described in [Section 9.2.1.4](#).

The End User can also generate a report containing a side-by-side comparison of hospitals by condition type by clicking the checkboxes for the hospitals listed in the report.

### 9.2.1.2 Hospital Reporting Path

The End User can choose a different path to search hospitals based on criteria, including the hospital type and geographic location, using a ZIP Code and region filter ([Screenshot 75](#)).

#### Screenshot 75: MONAHRQ-Generated Website Finding a Hospital Landing Page: Filter Detail

Home Quality Ratings Utilization Resources About Us

Condition or Topic Hospital

1 Select One  
Hospital Type

2 Hospital Type  
Short Term

Run Report

**Finding a Hospital**  
Browse a list of hospitals by location or type and compare them, or find a specific hospital and see how it rates.

The End User can define the search results by selecting a hospital type and geographic parameters, similar to the Condition or Topic reporting path mentioned in [Section 9.2.1.1](#).

The quality ratings report can be further refined by choosing a health topic. After selecting the search and reporting criteria, clicking the “Search” button will create a hospital profile page.

### 9.2.1.3 Quality Reports Views

Within the report results table, the End User can sort the report by hospital name, patient ratings, and measure type ([Screenshot 76](#)).

#### Screenshot 76: MONAHRQ-Generated Website Quality Ratings Results Detail

Sort By: Hospital Name A-Z		Compared To: Statewide Average		Display Type Symbols	Key: ▼ ▲ ●
Select hospitals to compare Compare	Hospital Name	<a href="#">How patients rate this hospital overall</a>	Measure name A	Measure name B	Measure name C
<input type="checkbox"/>	<a href="#">Hospital Name</a>	▲ Better than average	● Average	▼ Below average	Not enough data to report
<input type="checkbox"/>	<a href="#">Hospital Name</a>	▲ Better than average	● Average	▼ Below average	Not enough data to report
<input type="checkbox"/>	<a href="#">Hospital Name</a>	▲ Better than average	● Average	▼ Below average	Not enough data to report
<input type="checkbox"/>	<a href="#">Hospital Name</a>	▲ Better than average	● Average	▼ Below average	Not enough data to report

The “Hospital Name” column identifies all of the hospitals found within the ZIP Code or region filter applied. The “How patients rate this hospital overall” column is a composite measure to indicate which hospital performed the best. The “Measures” column lists the name of a measure available from the selected condition or topic and within Subtopic A. An End User may click the measure name, which will open a modal window, define the measure, and detail the methodology.

The End User can choose to view the quality ratings in the form of a bar chart or in raw data format. If the End User selects another data display to view, the legend text will automatically refresh to reflect the type of data display selected.

#### Screenshot 77: MONAHRQ-Generated Website Quality Ratings Raw Data Results Detail

Select hospitals to compare Compare	Hospital Name	Numerator	Denominator	Observed Rate	Observed Lower-bound CI	Observed Upper-bound CI	Expected Rate	Risk-Adjusted Rate	Risk-Adjusted Lower-bound CI	Risk-Adjusted Upper-bound CI
<input type="checkbox"/>	<a href="#">Hospital Name</a>	9	1,415	8.5	2.6	13.3	10.6	6.6	2.6	10.7
<input type="checkbox"/>	<a href="#">Hospital Name</a>	9	1,415	8.5	2.6	13.3	10.6	6.6	2.6	10.7
<input type="checkbox"/>	<a href="#">Hospital Name</a>	9	1,415	8.5	2.6	13.3	10.6	6.6	2.6	10.7

The “Raw Data” report contains fields of generated results for each hospital, including the numerator and denominator, observed lower- and upper-bound confidence interval (CI) values, expected rate, and risk-adjusted lower- and upper-bound CI rates for each measure ([Screenshot 77](#)).

The reports can also be refined so that End Users can compare the results for up to five hospitals. End Users can also compare hospital results against statewide and national average levels by selecting the hospital checkbox in the “Compare to” dropdown menu ([Screenshot 78](#)).

## Screenshot 78: MONAHRQ-Generated Website Quality Ratings Hospital Comparison

Compare to: Statewide Average

The hospital scored below average.

Not enough data to report    The hospital did not have enough data to report.

Sub-Topic Name Measures	Hospital Name	Hospital Name	Hospital Name	Hospital Name	Hospital Name
Measure Name	Average	Better than average	Average	Below average	Not enough data to report
Measure Name	Average	Better than average	Average	Below average	Not enough data to report
Measure Name	Average	Better than average	Average	Below average	Not enough data to report
Sub-Topic Name Measures					
Measure Name	Average	Better than average	Average	Below average	Not enough data to report
Measure Name	Average	Better than average	Average	Below average	Not enough data to report
Measure Name	Average	Better than average	Average	Below average	Not enough data to report

The Hospital Comparison report will display the selected topics and measures values compared against all hospitals selected. The End User has the ability to view the quality ratings in the form of bar charts or raw data.

### 9.2.1.4 Hospital Profile Page


The hospital profile report is available for all hospitals in your datasets. The report contains key attributes for each hospital, including the institution name, address, hospital description, and a location map using Google maps ([Screenshot 79](#)).

## Screenshot 79: MONAHRQ-Generated Website Hospital Profile Report

### Summary of Hospital Information: Facility 48

111 Colchester Avenue  
Burlington, VT 05401

Quality Ratings    Utilization



Total Beds: 0  
Phone Number: 8028474771  
Hospital Type: Transplant

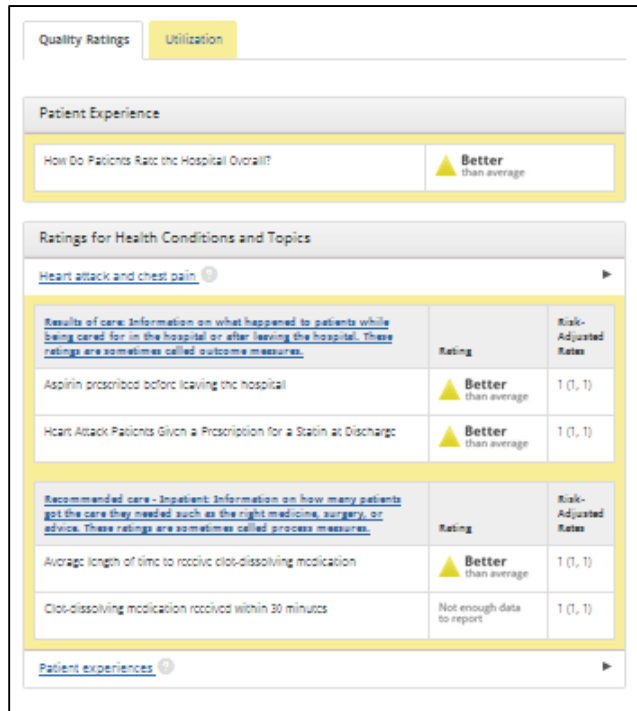
Ratings for Health Conditions and Topics

- [Childbirth](#)
- [Deaths or returns to the hospital](#)
- [Emergency department \(ED\)](#)
- [Heart attack and chest pain](#)
- [Heart failure](#)
- [Heart surgeries and procedures](#)
- [Imaging](#)
- [Infections](#)
- [Nursing care](#)
- [Other surgeries](#)

From the right pane, the End User can view the overall Patient Experience quality ratings for the hospital and a comprehensive list of ratings for health conditions and topics for the specific hospitals under the

Quality Ratings tab. A detailed ratings report will be generated when a link for a specific health condition or topic is clicked, as shown in [Screenshot 80](#).

### Screenshot 80: MONAHRQ Quality Ratings Hospital Profile Report–Ratings for Health Conditions and Topics



The ratings report lists the measures available for the hospital for all conditions and topic areas. The hospital is scored by measure, using the appropriate Quality Ratings symbol. The risk-adjusted rate appears to the right of the quality rating symbol.

The End User can view the Top 25 Diagnosis Related Group (DRG) discharge rates by clicking on the Utilization tab within the right pane of the Hospital Profile report. The DRG results are sourced by the Medicare Discharge dataset by default. If this dataset is not available, the IP dataset will source the data. Depending on the source used to generate the results, the measures will be displayed as shown in [Table 9](#) and [Table 10](#) below.

**Table 9: Report Results Sourced by Medicare Charge Dataset**

Measures	Hospital Rate
Number of Discharges	
Mean Charges in Dollars	
Mean Total Payments	

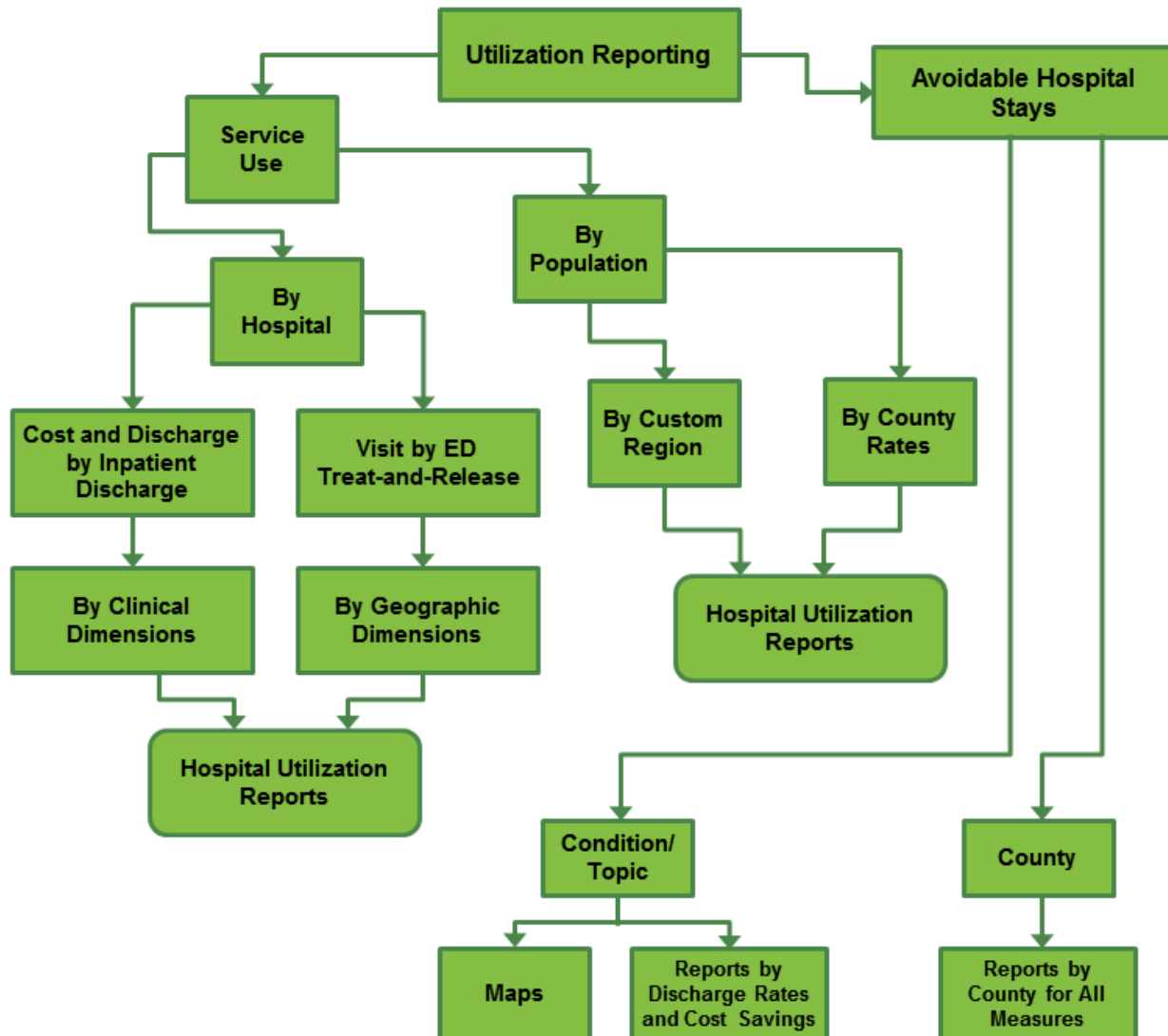
**Table 10: Report Results Sourced by IP Dataset**

Measures	Hospital Rate	State Rate	National Rate
Number of Discharges			
Mean Charges in Dollars			
Mean Cost in Dollars			
Mean Length of Stay in Days			

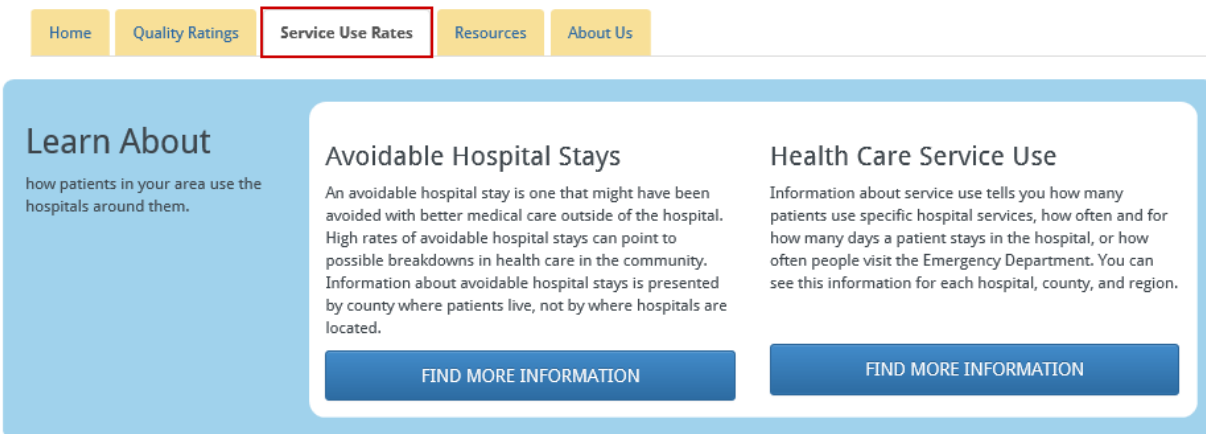
### 9.2.2 Utilization

When an End User clicks on the Usage Data tab in the primary navigation pane, they will be taken to a landing page where they can learn what usage data are, why usage data are important, and how to use the usage data ([Screenshot 81](#)). End Users can also choose to view usage data by searching for information about Avoidable Hospital Stays or Service Use. The Utilization reporting pathways are defined in [Figure 4](#).

**Figure 4: MONAHRQ-Generated Website Utilization Reporting Path**



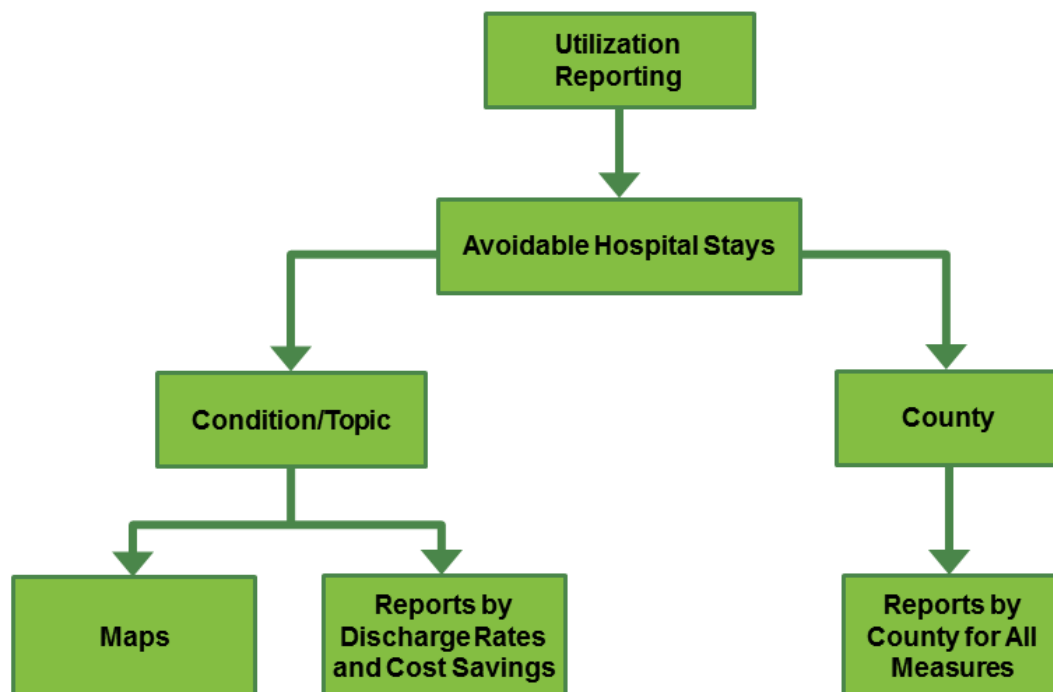
## Screenshot 81: MONAHRQ-Generated Website Usage Data Landing Page



### 9.2.2.1 Avoidable Hospital Stays Tab

From the Avoidable Hospital Stays landing page, the End User can search by a specific condition/topic or by a specific county or region ([Figure 5](#)). If the End User selects the topic option, a dropdown menu allows the End User to review a list of health conditions or topics ([Screenshot 82](#)). Once a condition or topic has been selected, the End User must also use the radio buttons to select the measure for which they would like to view data. After the End User clicks the “Search” button, the data display will populate with the appropriate results.

**Figure 5: Flowchart of MONAHRQ-Generated Website Avoidable Hospital Stays Reporting Path**





## Screenshot 82: MONAHRQ-Generated Website Avoidable Hospital Stays Landing Page

**1 Find By:**  
Condition/Topic ☒  
Specific County ☐

**2 Choose Condition**  
Heart Conditions ☒

**3 Choose a measure**  
How often patients are admitted to a hospital for problems related to high ☐

### Avoidable Hospital Stays

An avoidable hospital stay is one that might have been avoided with better medical care outside of the hospital. For example, a diabetes patient who receives good care from her primary care physician might not need a hospital stay for diabetes complications. Hospital stays like these are not always avoidable, but they are potentially avoidable with good quality health care.

[View Rates](#) [View Map](#)

Sort by:  
County Name (A to Z) ☐

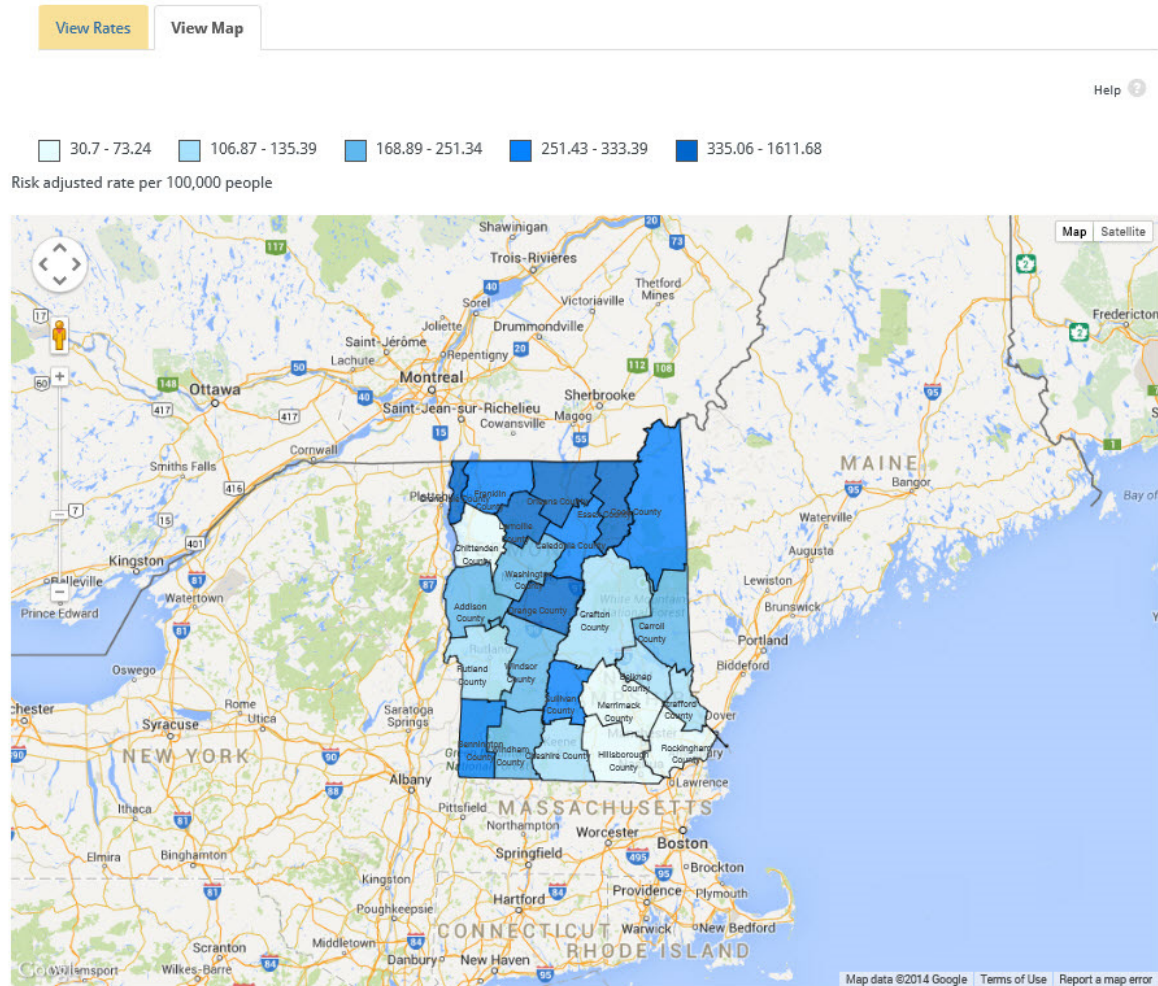
[Select Report to Copy](#) [Help](#)

Yearly Rates of Hospital Stays					Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays.					
County	Number of Hospital Stays	Number of County Residents	Observed Rate per 100,000 Residents	Risk-Adjusted Rate per 100,000 Residents	10%	20%	30%	40%	50%	<input type="text" value="Custom Percentage"/> <input type="button" value="Go"/>
Addison County	68	28,369	239.70	251.34	\$96,208.78	\$192,417.56	\$288,626.34	\$384,835.12	\$481,043.90	\$
Belknap County	65	47,704	136.26	126.38	\$98,939.30	\$197,878.59	\$296,817.88	\$395,757.18	\$494,696.48	\$
Bennington County	85	28,851	294.62	261.91	\$117,716.58	\$235,433.17	\$353,149.76	\$470,866.34	\$588,582.92	\$

To search for a specific county, an End User must select a county from the County Name dropdown menu; they may also select the conditions for which they would like to view ratings. If no conditions are selected and an End User clicks the “Search” button, all conditions for the specific county will appear in the data display.

Within the report table, the End User can view the rates for the specified county (i.e., the observed rate and the risk-adjusted rate), as well as the total cost savings on a percentage basis. The report table provides a set of preset calculated percentage values of 10, 20, 30, 40, and 50 percent. The End User can also enter a custom percentage value to calculate the total cost savings ([Screenshot 82](#)).

## Screenshot 83: MONAHRQ-Generated Website Avoidable Stays Report Map View

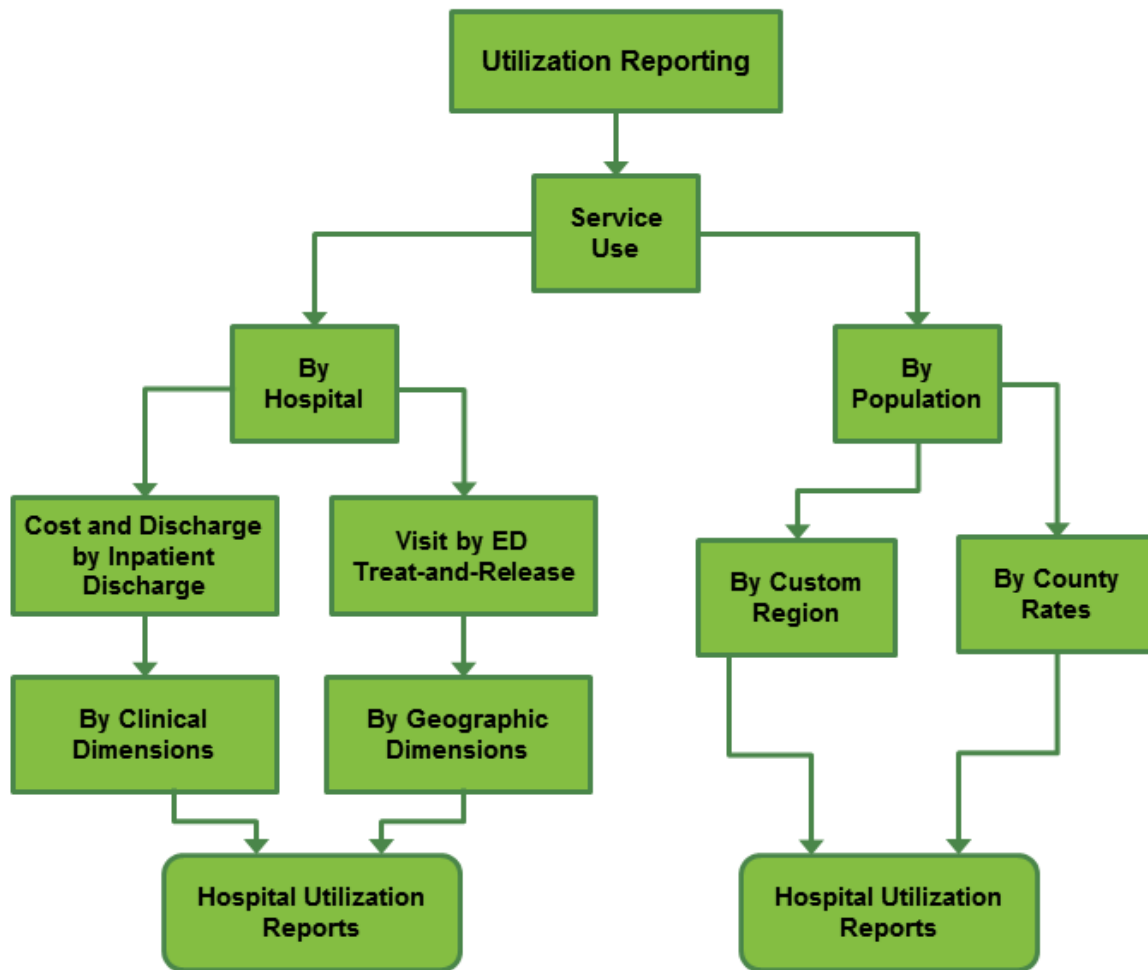


The default Usage Data report view displays rates and cost savings by county. The End User can view results in a map of the geographic region, where the selected counties are shaded in blue hues. Lighter shades of blue represent lower rates ([Screenshot 83](#)).

### 9.2.2.2 Service Use Tab

The Service Use reporting path allows the End User to generate reports displaying utilization data on a hospital or population level ([Figure 6](#) and [Screenshot 84](#)).

**Figure 6: MONAHRQ-Generated Website Service Use Reporting Path**



## Screenshot 84: MONAHRQ-Generated Website Service Use Report

The screenshot shows the top navigation bar with tabs: Home, Quality Ratings, Service Use Rates, Resources, and About Us. Below this is a sub-navigation bar with 'Avoidable Hospital Stays' and 'Service Use'. The 'Service Use' section contains five numbered filters: 1. Hospital Population (radio buttons for Inpatient and Emergency Dept.), 2. Inpatient (radio buttons for Local and Clinical), 3. Local Clinical (radio buttons for Local and Clinical), 4. Major Diagnosis Category (dropdown menu), and 5. Diseases & Disorders Of T (text input field).

### Inpatient Discharge Data

Hospital utilization means use of hospital services, such as the number and length of hospital stays for different health conditions or procedures.

County rates show use of hospital services by county, such as the number and length of hospital stays for different health conditions or procedures. These rates are based on where patients live, not where the hospitals they visit are located.

The screenshot shows the 'View Rates' section of the MONAHRQ website. It includes a sidebar with filters: View All, Narrow by: Hospital County, Geographic Region, ZIP Code, Hospital Name (Select a Hospital), and Type of Hospital. The main content area shows the title 'Diseases & Disorders Of The Nervous System (MDC 1)' and a table with columns: Hospital, Number of discharges, Mean charges in dollars, Mean costs in dollars, Mean length of stay in days, Median charges in dollars, Median costs in dollars, and Median length of stay. The table contains three rows: TOTAL U.S. in 2012, TOTAL View combined report, and Facility 17.

Hospital	Number of discharges	Mean charges in dollars	Mean costs in dollars	Mean length of stay in days	Median charges in dollars	Median costs in dollars	Median length of stay
TOTAL U.S. in 2012	36,484,850	\$36,701		4.510	\$19,660		3
TOTAL View combined report	22	\$31,882	\$29,457	3.045	\$17,128	\$11,269	3
Facility 17	1	\$15,458	\$14,060	1	\$15,458	\$14,060	1

To generate a Service Use report, the End User will follow the multistep process described below to define the specific attributes for the data results.

**Step 1:** Select the hospital type.

**Step 2:** Select Inpatient or ED data types. If the End User selects Inpatient data types, utilization rates will be displayed by inpatient discharge data. If the End User selects ED data types, utilization rates will be displayed by ED data.

**Step 3:** Select “Clinical Dimensions” or “Geographic Information.” If the End User selects “Clinical Dimensions,” Steps 4 and 5 will not appear. Selecting Clinical Dimensions allows the End User to search by all diagnoses or health conditions or topics. For more information about the report generation steps, see [Table 12](#) in [Section 10.3.1](#).

**Step 4:** Select Geographic Information.

**Step 5:** Select a region or ZIP Code to narrow the results.

For additional information on report dimensions, see [Table 12](#), [Section 10.3.1](#).

### 9.2.3 Resources Section

Selecting the Resources tab ([Screenshot 85](#)) takes the End User to a landing page where they can access information related to quality ratings or other health conditions or topics that may be useful for the End User.

## Screenshot 85: MONAHRQ-Generated Website Resources Page

Home Quality Ratings Service Use Rates **Resources** About Us

About Hospital Quality

- About the Methodology
- About the Quality Ratings
- Definitions
- AHRQ Website for Quality Indicators
- Medical Dictionary
- Quality of Care Improvement
- Site Map

### About Hospital Quality

- [What is health care quality?](#)
- [Why should I look at health care quality information?](#)
- [What can I do with information about health care quality? How can it help me?](#)
- [What do I do if I have concerns or complaints about quality of care?](#)
- [Where can I learn more about hospital quality?](#)

**About Hospital Utilization**

- [What is hospital utilization?](#)
- [Why should I look at information about hospital utilization and how can it help me?](#)

**About Avoidable Hospital Stays**

- [What are avoidable hospital stays?](#)
- [Why should I look at information about avoidable hospital stays and how can it help me?](#)

**About County Rates of Hospital Use**

- [What are county rates of hospital use?](#)
- [Why should I look at information about county rates of hospital use and how can it help me?](#)

### About Hospital Quality

**What is health care quality?**

Health care quality means that patients, doctors, and health care facilities aim to achieve the best possible results by:


- Doing the right thing (getting you the medicines, tests, and counseling you need)
- Doing it at the right time (when you need them)
- Doing it in the right way (your health care providers using the appropriate test or procedure safely, with no mistakes)

The Resources section contains a left-side navigation box where the End User can click on the defined resource topics. By clicking on the link in the left-side navigation box, the selected topic content will be displayed in the pane on the right side of the page.

### 9.2.4 About Us Section

Clicking on the “About Us” tab ([Screenshot 86](#)) allows the End User to view content related to your organization. This content reflects the content you entered in the “About Us” section of the “Customize Site” screen prior to publishing your site. This section uses the same layout design as the Resources section, where an End User can select a topic in the left-side navigation box and view the topic content in the pane on the right side of the screen.


## Screenshot 86: MONAHRQ-Generated Website About Us Page

**Health Data**  
Organization

[Print](#) [Share this Page](#) [Feedback](#)

[Home](#) [Quality Ratings](#) [Service Use Rates](#) [Resources](#) [About Us](#)

MONAHRQ®—My Own Network, powered by AHRQ—is innovative, free, website-generating software from the Agency for Healthcare Research and Quality (AHRQ). This desktop software enables any organization to create and host a website quickly and easily with understandable, evidence-based health care performance reports for providers, consumers, and others for use in improving health care quality. Using MONAHRQ for public or private reporting supports AHRQ's mission to improve the quality, accessibility, safety, efficiency, and cost transparency of health care for all Americans. Along with an organization's own patient discharge data, MONAHRQ draws from local hospital inpatient and emergency department (ED) discharge data, evidence-based measures from the Centers for Medicare & Medicaid Services (CMS) Hospital Compare and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey measures, as well as precalculated AHRQ Quality Indicators™ (QIs) to produce health care reports.

**MONAHRQ**

AHRQ's mission is to produce evidence to make health care safer, higher quality, more accessible, equitable, and affordable, and to work with the U.S. Department of Health and Human Services (HHS) and other partners to make sure that the evidence is understood and used.

Version: 5.0

[About Us](#)  
[About Us footer](#)

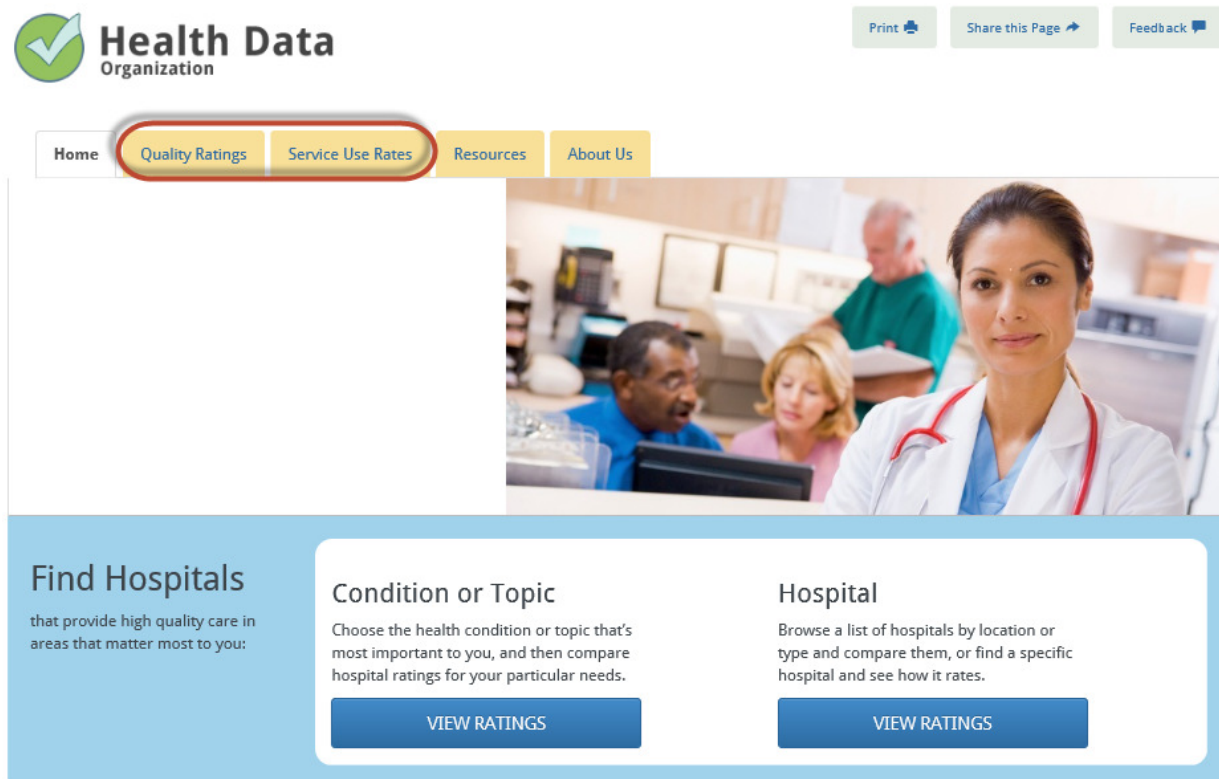
[Sitemap](#)  
[Home](#)  
[Quality Ratings](#)  
[Utilization](#)  
[Resources](#)  
[About Us](#)



## CHAPTER 10. MONAHRQ® Reporting Options

During the website generation process, you will select the reporting paths to display in your website; the paths will be sourced by the datasets you chose to generate your website in MONAHRQ. Once your website is generated, the End User can follow two main paths for reporting data on the MONAHRQ-generated website: (1) Quality Ratings and (2) Utilization ([Screenshot 87](#)). Within the two main pathways, the End User can further refine and customize their reports by expanding into topic areas, selecting county-level reporting within geographic parameters and usage rates on inpatient medical conditions and procedures.

### Screenshot 87: MONAHRQ-Generated Website Reporting Paths



### 10.1 Reporting Paths

The reports displayed on your MONAHRQ-generated website will be managed within your Reports Library ([Screenshot 88](#)). Within the library, your selections will result in the design of the reporting pathways presented in your website. As you define the reports to be displayed on your MONAHRQ-generated website, you will also need to define the website audience. The audience type defines the type of End User who will use the report tools. Depending on the reports that will be displayed on the website, the appropriate audience must be selected to trigger the desired output. Once you have selected the audience, MONAHRQ will return audience-based, defined reports accordingly, as shown in [Table 11](#).

### Screenshot 88: MONAHRQ Reports Library

## Reports

MANAGE YOUR REPORTS

Add New Report +

Reports:

Preview and edit report names, descriptions and attributes.

Filter by:

Enter text to filter results

Filter by Category:

All Report Categories

Report	Websites	Type	Category	Custom?	Datasets	Recommender
Hospital Comparison Report - Bar Chart	Cornell Practice Site	Hospital Comparison Report - Bar Chart	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
Hospital Comparison Report - Icons	Cornell Practice Site	Hospital Comparison Report - Icons	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
Hospital Comparison Report - Icons and Confidence Intervals	Cornell Practice Site	Hospital Comparison Report - Icons and Confidence Intervals	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences
Hospital Profile Report	Cornell Practice Site	Hospital Profile Report	Quality	No	Hospital Compare Data, Inpatient Discharge, Medicare Provider Charge Data	Consumers, All Audiences
Hospitals listings based on the search from the home page	Cornell Practice Site	Hospitals listings based on the search from the home page	Quality	No	Hospital Compare Data	Consumers, All Audiences
Hospitals Quality Ratings - Bar Chart	Cornell Practice Site	Hospitals Quality Ratings - Bar Chart	Quality	No	Hospital Compare Data, AHRQ-QI Composite Data, AHRQ-QI Provider Data	Consumers, All Audiences

**Table 11: Reporting Paths By Audience and Category**

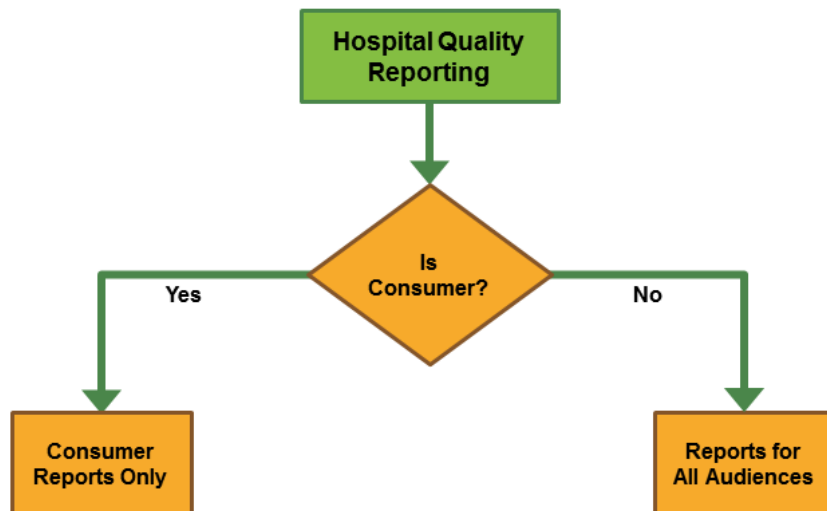
	Report Type	Recommended Audience	Report Category
1	Hospital listings based on the search from the home page	Consumers, All Audiences	Quality
1	Hospital Quality Ratings—Symbols only	Consumers, All Audiences	Quality
2	Hospital Quality Ratings—Symbols with rates	All Audiences	Quality
3	Hospital Quality Ratings—Bar chart	Consumers, All Audiences	Quality
4	Hospital Quality Ratings—Detail tabular view	All Audiences	Quality
5	Hospital Comparison Report (up to five hospitals)	Consumers, All Audiences	Quality
6	Hospital Profile Report	Consumers, All Audiences	Quality
7	Inpatient Hospital Discharge (IP) Utilization Report	All Audiences	Utilization
8	IP Utilization—Stratified Report	All Audiences	Utilization
9	Emergency Department Treat-and-Release (ED) Utilization Report	All Audiences	Utilization
10	ED Utilization—Stratified Report	All Audiences	Utilization
11	Avoidable Hospital Stays Maps	Consumers, All Audiences	Utilization
12	Avoidable Hospital Stays By County Report	All Audiences	Utilization
13	Avoidable Hospital Stays By County Profile Report	All Audiences	Utilization
14	Utilization By County or Custom Region Report	All Audiences	Utilization
15	Utilization by County or Custom Region—Stratified Report	All Audiences	Utilization



## 10.2 Quality Ratings Reporting Path

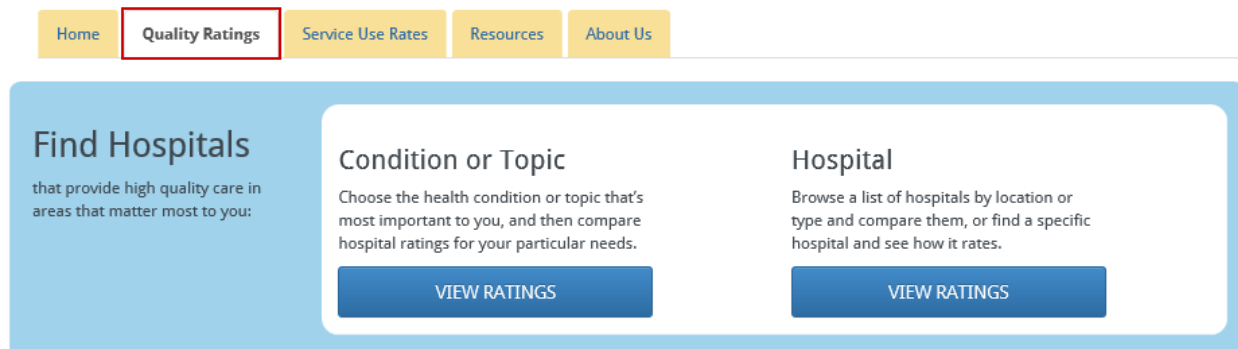
The Quality Ratings reporting path allows the End User to generate reports from two subpaths: (1) Conditions and Topics, and (2) Hospitals. The reports made available to the End User will be dependent on the audience type you selected, as defined in [Figure 7](#) and [Table 11](#).

**Figure 7: MONAHRQ Quality Report Audience Type Selection**



Within each of these reporting paths, End Users can compare the Hospital Quality Ratings by “Hospital” or by “Condition or Topic.” The “Hospital” path allows End Users to search for hospitals or providers based on geographic parameters such as ZIP Code or hospital type. The “Condition or Topic” path will graphically show quality ratings by topic and subtopic for each indicator and hospital selected. End users can also opt to view the information as a bar chart, in a detailed table, or as detailed statistics in tabular form. [Screenshot 89](#) shows the Quality Ratings reporting path. Information about generating a hospital Quality Ratings report can be found in [Section 10.2.1.1](#).

**Screenshot 89: MONAHRQ Quality Ratings Reporting Path Navigation**



### 10.2.1 Condition or Topic Path

When the End User selects the Condition or Topic Path, the End User will be directed to a landing page to further filter and select criteria for their generated reports ([Screenshot 90](#)).

## Screenshot 90: MONAHRQ Quality Ratings Condition or Topic Report Criteria Detail

1 Select Topic  
Childbirth

2 Select Sub Topic  
Practice patterns

3 Refine Results  
Hospital Name

4 Hospital Name  
Facility 48

Refine Report

### 10.2.1.1 Hospital Quality Report

The End User will first select the type of hospital from the Hospital Type dropdown box. Then, the End User will select either ZIP Code or region for the geographic parameters, and then select a health condition or topic and subtopic. Clicking the “Search” button will return a report containing all hospitals in the geographic region and the same hospital type. The report will contain quality rating symbols, identifying how patients rate the hospitals overall ([Screenshot 91](#)).

## Screenshot 91: MONAHRQ-Generated Website Hospital Quality Ratings—Rating Symbol

### Nursing care ?

#### Results of care - Complications ?

























Sort by: Hospital Name

Compared To: National Average

Display Type: Symbols

Select Report to Copy

Help

Select hospitals to compare	Hospital Name	How often patients develop a bed sore in the hospital	How often patients with catheters develop blood infections as a result of care in the hospital	How often patients break a hip bone when in the hospital recovering from a surgery	How often patients in the hospital have problems with blood sugar control or kidney failure after having a surgery	How often patients in the hospital get a blood clot in the lung or leg vein after surgery	How often patients get a serious bloodstream infection after surgery
<input type="checkbox"/>	<a href="#">Green Mountain Psychiatric Care Center</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 48</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 47</a>	 Below average	 Average	 Average	 Average	 Average	 Better than average
<input type="checkbox"/>	<a href="#">Facility 45</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 44</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 43</a>	 Average	 Average	 Average	 Better than average	 Average	 Better than average
<input type="checkbox"/>	<a href="#">Facility 42</a>	 Average	 Below average	 Average	 Better than average	 Average	 Better than average
<input type="checkbox"/>	<a href="#">Facility 41</a>	 Below average	 Average	 Average	 Better than average	 Average	 Average

Within the Quality Ratings screen, the End User can create variations of the report by comparing the results against the National or State average results, or change the display type from the default symbol to the following displays:

- Symbols and risk-adjusted rates ([Screenshot 92](#))

### Screenshot 92: MONAHRQ-Generated Website Hospital Quality Ratings—Symbols and Risk-Adjusted Rates

Select hospitals to compare	Hospital Name	<a href="#">How patients rate this hospital overall</a>	<a href="#">Aspirin prescribed before leaving the hospital</a>	<a href="#">Heart Attack Patients Given a Prescription for a Statin at Discharge</a>	<a href="#">Medicine to reduce blood clots given within 30 minutes of getting to the hospital</a>	<a href="#">Procedure to open blood vessels done within 90 minutes of getting to the hospital</a>
<input type="checkbox"/>	<a href="#">facility 1</a>	Average	Average 1 (1, 1)	Better than average 1 (1, 1)	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">facility 2</a>	Average	Better than average 1 (1, 1)	Better than average 1 (1, 1)	Not enough data to report	Not enough data to report

- Bar charts ([Screenshot 93](#))

### Screenshot 93: MONAHRQ-Generated Website Hospital Quality Ratings—Bar Charts

Select hospitals to compare	Hospital Name	<a href="#">How often patients develop a bed sore in the hospital</a>	<a href="#">How often patients with catheters develop blood infections as a result of care in the hospital</a>	<a href="#">How often patients break a hip bone when in the hospital recovering from a surgery</a>	<a href="#">How often patients in the hospital have problems with blood sugar control or kidney failure after having a surgery</a>	<a href="#">How often patients in the hospital get a blood clot in the lung or leg vein after surgery</a>	<a href="#">How often patients get a serious bloodstream infection after surgery</a>
		Nationwide Mean 0.4200	Nationwide Mean 0.3900	Nationwide Mean 0.0000	Nationwide Mean 0.5200	Nationwide Mean 6.1700	Nationwide Mean 10.6200
		SHORTER BARS ARE BETTER	SHORTER BARS ARE BETTER	SHORTER BARS ARE BETTER	SHORTER BARS ARE BETTER	SHORTER BARS ARE BETTER	SHORTER BARS ARE BETTER
<input type="checkbox"/>	<a href="#">Green Mountain Psychiatric Care Center</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 48</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 47</a>	2.0374 (0.0000, 4.3085)	0.7498 (0.3905, 1.1091)	0.0000 (0.0000, 0.1729)	0.3249 (0.0000, 1.1204)	6.4922 (4.7203, 8.2641)	2.9905 (0.0000, 10.7843)
<input type="checkbox"/>	<a href="#">Facility 45</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 44</a>	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report	Not enough data to report
<input type="checkbox"/>	<a href="#">Facility 43</a>	3.0110 (0.0000, 8.5443)	1.7776 (0.7891, 2.7661)	0.0000 (0.0000, 0.4435)	0.0000 (0.0000, 1.6040)	4.0710 (0.2019, 7.9401)	0.0000 (0.0000, 13.0252)
<input type="checkbox"/>	<a href="#">Facility 42</a>	2.0244 (0.0000, 6.5561)	1.8507 (1.1366, 2.5648)	0.0000 (0.0000, 0.3082)	0.0000 (0.0000, 1.2498)	5.3834 (2.3908, 8.3760)	3.5812 (0.0000, 15.6499)

- Raw data ([Screenshot 94](#))

#### Screenshot 94: MONAHRQ-Generated Website Hospital Quality Ratings—Raw Data

Select hospitals to compare	Hospital Name	Numerator	Denominator	Observed Rate	Observed Lower-bound CI	Observed Upper-bound CI	Expected Rate	Risk-Adjusted Rate	Risk-Adjusted Lower-bound CI	Risk-Adjusted Upper-bound CI
<input type="checkbox"/>	<a href="#">facility 1</a>	2	1	1	1	1	1	1	1	1
<input type="checkbox"/>	<a href="#">facility 2</a>	6	1	1	1	1	1	1	1	1

### 10.2.2 Hospital Path

The End User can generate a Hospital Comparison report by following the Hospital reporting path. Clicking the Hospital “VIEW RATINGS” button will direct the End User to a Hospitals landing page ([Screenshot 95](#)). Within this page, the End User will select a hospital type and a geographic parameter of either ZIP Code or region to refine the hospital list.

#### Screenshot 95: MONAHRQ Quality Ratings Finding a Hospital Landing Page

Home

Quality Ratings

Service Use Rates

Resources

About Us

Condition or Topic

Hospital

1 Find Hospitals

Hospital Name ☐

2 Hospital Name

Green Mountain Psychiatric Care C

Run Report

#### 10.2.2.1 Hospital Comparison Report

After generating the hospital report, the End User can select up to five hospitals to compare side-by-side, by selecting the checkboxes in the column to the left of the hospital names. The Hospital Comparison report will then be displayed, providing quality ratings symbols for all conditions and topics available for the hospitals being compared. The End User can change the result type from symbols to symbols and risk-adjusted rates or bar charts, as shown in [Screenshot 96](#).

## Screenshot 96: MONAHRQ Quality Ratings Hospital Comparison Report

### Compare Hospitals

[Back to previous report](#)

Compared To: ?

National Average



Display Type:

Symbols



Select Report to Copy

Help ?

Childbirth					
Practice patterns Measures	<a href="#">Facility 43</a>	<a href="#">Facility 44</a>	<a href="#">Facility 45</a>	<a href="#">Facility 47</a>	<a href="#">Facility 48</a>
<a href="#">Percentage of births (deliveries) that are C-sections</a>	Better than average	Not enough data to report	Not enough data to report	Better than average	Not enough data to report
<a href="#">How often there are no complications for mothers who gave birth vaginally when the mother has had a C-section in the past</a>	Better than average	Not enough data to report	Not enough data to report	Average	Not enough data to report
<a href="#">Percent of women having their first time C-section</a>	Average	Not enough data to report	Not enough data to report	Better than average	Not enough data to report
<a href="#">How often babies are born vaginally when the mother has had a C-section in the past</a>	Better than average	Not enough data to report	Not enough data to report	Average	Not enough data to report
Results of care Measures	<a href="#">Facility 43</a>	<a href="#">Facility 44</a>	<a href="#">Facility 45</a>	<a href="#">Facility 47</a>	<a href="#">Facility 48</a>
<a href="#">How often newborns babies have an injury or get an infection during delivery</a>	Average	Average	Not enough data to report	Average	Average
<a href="#">How often women who give birth vaginally with forceps or vacuum have a serious vaginal tear</a>	Average	Not enough data to report	Not enough data to report	Average	Not enough data to report
<a href="#">How often women who give birth vaginally without forceps or vacuum have a serious vaginal tear</a>	Below average	Not enough data to report	Not enough data to report	Average	Not enough data to report

#### 10.2.2.2 Hospital Profile Report

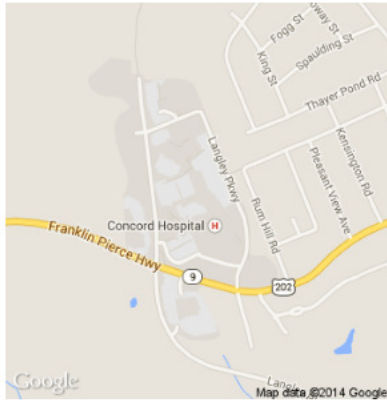
The End User can view a Hospital Profile Report on any of the hospitals identified in the reports ([Screenshot 97](#)). From the Hospital search landing page, the End User can select all hospitals contained within the datasets imported into the Dataset Library from the “Find a Specific Hospital” dropdown menu. The End User can also click on the hospital name within any of the reports. The hospital name value links to the associated Hospital Profile Report.

The hospital profile report is available for all hospitals in your datasets. The report contains key attributes for each hospital, including the institution name, address, hospital description, and a location map using Google maps ([Screenshot 97](#)).

#### Screenshot 97: MONAHRQ Quality Ratings Hospital Profile Report

## Summary of Hospital Information: Facility 1

250 Pleasant St  
Concord, NH 03301



HOSPITAL DESCRIPTION GOES HERE.

**Total Beds:** 295  
**Phone Number:** 6032252711  
**Hospital Type:** General  
**Parent Organization Name:**  
**Provides Emergency Department Services:** Yes

Quality Ratings

Utilization

### Ratings for Health Conditions and Topics

[Deaths or returns to the hospital](#) ?

[Emergency department \(ED\)](#) ?

[Heart attack and chest pain](#) ?

[Heart failure](#) ?

[Heart surgeries and procedures](#) ?

[Imaging](#) ?

[Infections](#) ?

[Patient safety](#) ?

[Patient survey results](#) ?

[Pneumonia](#) ?

[Prevention and Treatment](#) ?

[Surgical patient safety](#) ?

The Hospital Profile Report contains useful information for the End User, including a map of the hospital location, website URL, and descriptive statistics including the facility type, total number of beds, and total patient days.

From the right pane of the report, the End User can view a comprehensive list of ratings for health conditions and topics for the specific hospitals. When the End User selects a specific health condition or topic link, a detailed ratings report will be shown ([Screenshot 98](#)).

## Screenshot 98: MONAHRQ Quality Ratings Hospital Profile Report—Ratings for Health Conditions and Topics

Quality Ratings
Utilization

Patient Experience

How Do Patients Rate the Hospital Overall?
Better than average

Ratings for Health Conditions and Topics

Heart attack and chest pain

Results of care: Information on what happened to patients while being cared for in the hospital or after leaving the hospital. These ratings are sometimes called outcome measures.

	Rating	Risk-Adjusted Rates
Aspirin prescribed before leaving the hospital	Better than average	1 (1, 1)
Heart Attack Patients Given a Prescription for a Statin at Discharge	Better than average	1 (1, 1)

Recommended care - Inpatient: Information on how many patients got the care they needed such as the right medicine, surgery, or advice. These ratings are sometimes called process measures.

	Rating	Risk-Adjusted Rates
Average length of time to receive clot-dissolving medication	Better than average	1 (1, 1)
Clot-dissolving medication received within 30 minutes	Not enough data to report	1 (1, 1)

Patient experiences

Clicking on the Utilization tab on the Hospital Profile Report will show the discharge, charge or cost, and payment information for the top 25 DRGs by discharge volume. This report will not be available to the “Consumer” target audience. The report is shown in [Screenshot 99](#).

## Screenshot 99: MONAHRQ Quality Ratings Hospital Profile Report—Utilization Tab

Quality Ratings
Utilization

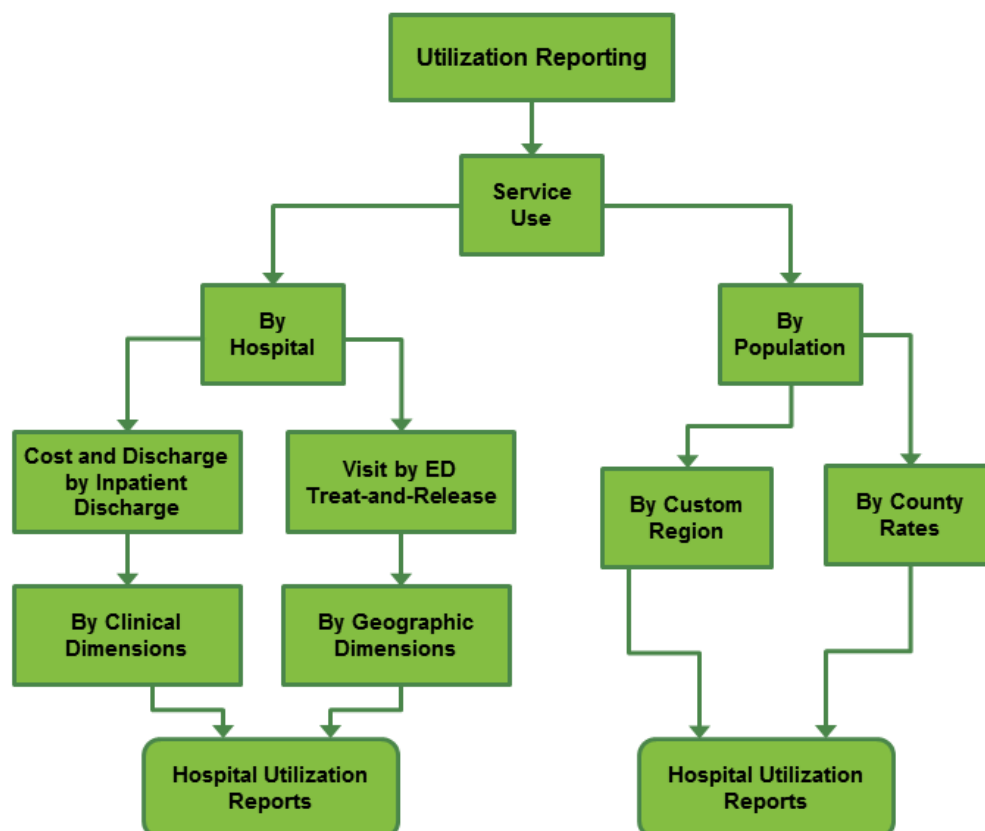
Medicare Charge Data for the Top 25 Diagnosis Related Groups (DRGs)

Major head & neck procedures w CC/MCC or major device	
Major head & neck procedures w/o CC/MCC	
Cranial/facial procedures w CC/MCC	
Cranial/facial procedures w/o CC/MCC	
Other ear, nose, mouth & throat O.R. procedures w CC/MCC	
Other ear, nose, mouth & throat O.R. procedures w/o CC/MCC	
Sinus & mastoid procedures w CC/MCC	
Sinus & mastoid procedures w/o CC/MCC	

### 10.3 Utilization Reporting Path

The “Utilization” path allows the End User to view reports under two subpaths: “Service Use” and “Avoidable Hospital Stays.” Within these subpaths, an End User can generate reports with county- and region-level data and cost data based on clinical dimensions. End Users can also group results by geographical dimensions ([Screenshot 100](#) and [Figure 8](#)).

**Figure 8: Utilization Reporting User Flowchart**



#### 10.3.1 Service Use Reporting Path

An End User can generate utilization reports by using Inpatient Hospital Discharge data or Emergency Department (ED) treat-and-release data. When stepping through the report generation process, the End User will have the option to select a Hospital and Population-and Region-level report types.

To generate a report, the End User must complete all of the steps involved in the report building and filtering process. The selections made in this multistep process will result in a custom report based on the criteria selected.

Step one of the reporting building and filtering process for the Avoidable Hospital Stays and Service Use paths requires the End User to select a “Find By” or “View By” option, respectively. For the Avoidable Hospital Stays path, the “Find By” options are Condition/Topic or County. For the Service Use path, the “View By” selections are Hospitals or Population. Depending on the View type selected, the filtering categories in the remaining steps will dynamically change. [Table 12](#) identifies the possible report selection categories for each reporting path.



**Table 12: Service Use Multistep Report Selection Categories**

Reporting Path	Step 1	Step 2	Step 3	Step 4	Step 5
Avoidable Hospital Stays	Condition/Topic	Choose Condition	Choose a Measure		
	County	Choose County	Choose a Condition		
Service Use	Hospital	Inpatient	Geo Info Clinical	Select a Dimension	Specify Value
	Hospital	ED	Geo Info Clinical	Select a Dimension	Specify Value
	Population	County	Geo Info Clinical	Select a Dimension	Specify Value
	Population	Region	Geo Info Clinical	Select a Dimension	Specify Value

**10.3.1.1 Inpatient Hospital Utilization Report**

During the report generation process, the End User can select the “Hospital” dimension to generate the Inpatient Hospital Utilization report, which will generate statistics using the clinical dimensions based on Major Diagnostic Category (MDC) and Diagnosis Related Group (DRG) for diagnoses, or Clinical Classifications Software (CCS) for procedures (for more information see: <http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>).

**Screenshot 100: Service Use Inpatient Data Report**

The screenshot displays the 'Service Use' report selection interface. It features a light blue header with two tabs: 'Avoidable Hospital Stays' and 'Service Use'. Below the header, the interface is divided into five numbered steps, each with a selection option:

- Step 1:** Hospital (selected with a radio button) and Population (unselected).
- Step 2:** Inpatient (selected with a radio button) and Emergency Dept. (unselected).
- Step 3:** Locale (unselected) and Clinical (selected with a radio button).
- Step 4:** Major Diagnosis Category (dropdown menu).
- Step 5:** All (text input field).

The “Inpatient Discharge Data” path shows detailed information about hospital discharges, charges, estimated costs, and length of stay ([Screenshots 100](#) and [101](#)). The “ED Data” path shows detailed information about ED discharges such as number of ED visits, percentage of patients admitted to the hospital from the ED, percentage of patients who died during the ED visit, and percentage of patients who died during the hospital stay following an ED visit.

## Screenshot 101: Inpatient Hospital Utilization Report

View All

Narrow by:

Hospital County

Geographic Region

ZIP Code

Hospital Name

Select a Hospital

Type of Hospital

View Rates

Sort by:

Hospital (A to Z)

View by:

Hospital

Select Report to Copy

Help

### By All Major Diagnostic Category

Hospital	Number of discharges	Mean charges in dollars	Mean costs in dollars	Mean length of stay in days	Median charges in dollars	Median costs in dollars	Median length of stay
TOTAL U.S. in 2012	36,484,850	\$36,701		4.510	\$19,660		3
TOTAL <a href="#">View combined report</a>	620,265	\$28,871	\$24,115	4.16	\$16,133	\$12,466	3
<a href="#">Facility 1</a>	35,921	\$22,792	\$10,327	5.45	\$12,635	\$5,725	3
<a href="#">Facility 10</a>	22,073	\$29,549	\$23,196	3.946	\$17,291	\$13,573	3
<a href="#">Facility 12</a>	444	\$1,636	\$671	7.311	\$1,503	\$616	4
<a href="#">Facility 14</a>	8,635	\$25,387	\$41,293	4.088	\$16,013	\$26,045	3
<a href="#">Facility 15</a>	443	\$3,297	\$3,460	3.526	\$2,267	\$2,378	3
<a href="#">Facility 16</a>	3,410	\$18,408	\$18,084	3.93	\$9,291	\$9,128	3
<a href="#">Facility 17</a>	17,159	\$19,254	\$17,514	3.459	\$10,690	\$9,724	2
<a href="#">Facility 18</a>	9,320	\$23,244	\$24,177	4.229	\$15,572	\$16,196	3
<a href="#">Facility 19</a>	12,595	\$27,789	\$44,470	4.789	\$16,912	\$27,064	3
<a href="#">Facility 2</a>	12,850	\$20,337	\$11,049	4.326	\$12,546	\$6,816	3
<a href="#">Facility 20</a>	18,477	\$25,054	\$19,872	4.202	\$13,569	\$10,762	3
<a href="#">Facility 21</a>	3,069	\$24,854	\$27,996	3.196	\$15,728	\$17,716	2
<a href="#">Facility 23</a>	1,898	\$15,709	\$19,070	3.672	\$2,445	\$2,968	3

The Inpatient Hospital Utilization report displays the number of discharges, median charges, median cost, and the median length of stay by selected clinical groups for each selected hospital ([Screenshot 101](#)). End Users can select a condition or procedure group to access the stratified utilization statistics by demographic groups (e.g., age group, gender, payer, and race/ethnicity) for the selected hospital.

A description of the columns listed in the Inpatient Hospital Utilization report is below:

- **Number of discharges (all-listed):** The number of hospital stays (or discharges) for the selected condition or procedure is provided for each hospital. All listed diagnoses include the principal diagnosis (or reason for going to the hospital) as well as any other conditions that coexist during the hospital stay. All listed procedures include all procedures done for the patient.
- **Number of discharges (principal):** The number of hospital stays (or discharges) for the selected condition or procedure is provided for each hospital. Principal diagnosis means this is the condition chiefly responsible for admission to the hospital for care. The principal procedure is the procedure that was done to address the principal diagnosis.

- **Mean charges in dollars:** The mean or average charge is sometimes reported for each hospital. This is the amount the hospital asked to be paid for services. This does not include professional (doctor) fees. Charges are not necessarily how much was paid.
- **Mean costs in dollars:** The mean or average cost is sometimes reported for each hospital. Costs are the actual value of services performed (while charges represent the amount the hospital asked to be paid for services). Total charges were converted to costs using cost-to-charge ratios based on hospital accounting reports from the Centers for Medicare and Medicaid Services (CMS). In general, costs are less than charges. AHRQ adjusts the cost-to-charge ratios to work with this type of hospital data.
- **Mean length of stay in days:** The average or mean length of stay (LOS) is reported for each hospital. This is the average number of nights the patient remained in the hospital. When a patient is admitted and discharged on the same day, it has a length of stay of zero. A longer length of stay does not necessarily mean better or more care is given to patients.

Note: Cost is based on charges that have been adjusted to estimate costs, using hospital-specific cost-to-charge ratios. Cost will not be reported if you choose not to show charge information. In addition to reports in the Inpatient Hospital Utilization subpath, your decision to not show charge information will suppress the cost information in other reports, such as the reports on Avoidable Hospital Stays—Cost Savings and County Rates.

To generate the stratification version of the reports ([Screenshot 102](#)), select the “View Combined Report” link, as shown in [Screenshot 101](#).

### Screenshot 102: Inpatient Hospital Utilization Stratification Report

View All

Narrow by:

Hospital County

Geographic Region

ZIP Code

Hospital Name

Select a Hospital

Type of Hospital

View Rates

Select Report to Copy

Help

By All Major Diagnostic Category for Hospital  
[Back to summary](#)

Hospital	Number of discharges	Mean charges in dollars	Mean costs in dollars	Mean length of stay in days	Median charges in dollars	Median costs in dollars	Median length of stay
TOTAL U.S. in 2012	36,484,850	\$36,701		4.510	\$19,660		3
Age Group							
<18	118,132	\$10,621	\$8,385	4.227	\$2,395	\$1,946	3
18-44	170,076	\$22,925	\$19,392	4.213	\$12,980	\$10,329	3
45-64	131,826	\$34,817	\$29,222	4.133	\$21,871	\$17,399	3
65+	200,231	\$40,774	\$33,137	4.094	\$26,797	\$20,179	3
Gender							
Male	259,101	\$33,947	\$28,396	4.151	\$19,061	\$14,674	3
Female	361,164	\$25,229	\$21,049	4.167	\$14,492	\$11,218	3
Payer							
Missing	567	\$21,773	\$20,946	3.982	\$12,528	\$8,658	2
Medicare	223,928	\$29,804	\$25,587	5.071	\$16,739	\$13,505	3
Medicaid	124,599	\$28,535	\$24,623	4.165	\$15,835	\$12,724	3
Private including HMO	221,966	\$28,296	\$22,474	3.455	\$15,738	\$11,395	2
Self-pay	34,832	\$27,993	\$23,127	3.113	\$15,929	\$11,956	2
No Charge	2,448	\$31,962	\$31,489	3.133	\$17,925	\$16,420	3
Other	11,925	\$27,802	\$22,110	3.402	\$15,530	\$11,663	2
Race/Ethnicity							

### 10.3.1.2 Emergency Department Treat-and-Release Utilization Report

The Emergency Department Treat-and-Release (ED) Utilization Report allows End Users to select regions and choose conditions or diagnoses to further refine the reports ([Screenshot 103](#)). End Users can

generate reports that show statistics using common clinical groupers based on the International Classification of Diseases, Clinical Modification (ICD-9-CM) codes, including Clinical Classifications Software (CCS) for diagnoses.

### Screenshot 103: Emergency Department Treat-and-Release Utilization Report

Avoidable Hospital Stays		Service Use	
1	Hospital <input checked="" type="radio"/> Population <input type="radio"/>	2	Inpatient <input type="radio"/> Emergency Dept. <input checked="" type="radio"/>
3	Locale <input type="radio"/> Clinical <input checked="" type="radio"/>	4	All <input type="text"/>

## Emergency Department Data

Hospital utilization means use of hospital services, such as the number and length of hospital stays for different health conditions or procedures.

County rates show use of hospital services by county, such as the number and length of hospital stays for different health conditions or procedures. These rates are based on where patients live, not where the hospitals they visit are located.

[View Rates](#)

View All

Narrow by:

Hospital County

Geographic Region

ZIP Code

Hospital Name

Select a Hospital

Type of Hospital

Sort by:

Hospital (A to Z)

View by:

Hospital

Select Report to Copy

Help

### By All CCS Diagnosis

Hospital	Number of ED Visits	Number Admitted to Hospital Following ED Visit	Number of Deaths During ED Visit	Number of Deaths Post-Admission Following ED Visit
TOTAL U.S. in 2011	123,574,363	18,403,103	194,904	522,263
TOTAL <a href="#">View combined report</a>	781,834	148,931	2,698	2,692
<a href="#">Facility 1</a>	37,641	9,111	0	277
<a href="#">Facility 10</a>	6,038	6,038	0	112
<a href="#">Facility 12</a>	15	15	0	2
<a href="#">Facility 14</a>	4,037	4,037	0	93
<a href="#">Facility 15</a>	443	443	0	5
<a href="#">Facility 17</a>	41,215	9,659	0	108
<a href="#">Facility 19</a>	34,917	1,811	0	28
<a href="#">Facility 2</a>	25,625	3,348	0	82

End Users can generate many different summary reports in the Utilization path using data that is a combination of ED treat-and-release data and ED visits that resulted in admission. The visits that resulted in admission are contained in the Inpatient Discharge Data file.

Single Condition: If End Users select all hospitals and a single condition, the summary report will display statistics by the list of hospitals for the selected condition. For each selected hospital and condition, the report displays the hospital name, county, number of ED visits, number admitted to the hospital following

the ED visit, number of deaths during the ED visit, and deaths post-admission following the ED visit. From the summary report, End Users can select a provider to access statistics reported by various dimensions, much the same as selecting a single hospital and a condition from the ED Utilization main navigation screen. A description of the columns in the ED Treat-and-Release Utilization report is below:

- **Number of ED visits:** This is the total number of emergency department visits to the hospital.
- **Number admitted to hospital following ED visit:** This is the number of patients admitted to the hospital following an emergency department visit (percent of all ED visits).
- **Number of deaths during ED visit:** This is the number of patients who died during an ED visit (percent of all ED visits that resulted in patient's death).
- **Number of deaths post-admission following ED visit:** This is the number of patients who died after they were admitted following an emergency department visit (percent of all ED visits that resulted in patient's death post-admission).

To generate the stratification version of the report ([Screenshot 104](#)), select the “View Combined Report” link, as shown in [Screenshot 103](#).

#### Screenshot 104: ED Treat-and-Release Utilization Stratification Report

View All

Narrow by:

Hospital County

Geographic Region

ZIP Code

Hospital Name

Select a Hospital

Type of Hospital

View Rates

Select Report to Copy

Help

#### By All CCS Diagnosis for Hospital

[Back to summary](#)

Hospital	Number of ED Visits	Number Admitted to Hospital Following ED Visit	Number of Deaths During ED Visit	Number of Deaths Post-Admission Following ED Visit
TOTAL U.S. in 2011	123,574,363	18,403,103	194,904	522,263
<b>Age Group</b>				
<18	150,525	29,660	0	527
18-44	306,435	41,116	0	766
45-64	165,989	30,983	0	527
65+	158,885	47,172	2,698	872
<b>Gender</b>				
Male	333,673	62,103	1,349	1,068
Female	448,161	86,828	1,349	1,624
<b>Payer</b>				
Missing	93	93	0	0
Medicare	174,253	53,756	2,698	1,773
Medicaid	192,923	26,975	0	214
Private including HMO	259,566	57,398	0	519
Self-pay	116,954	7,246	0	118
No Charge	1,976	627	0	1
Other	36,069	2,836	0	67
<b>Race/Ethnicity</b>				
Missing	1,332	1,332	0	16

### 10.3.2.4 Utilization by Population Report

Within the Utilization reporting path, the End User can run reports on rates related to specific measures on a county- or region-level basis. From the multistep report generation process, the End User will select the “Population” report view to generate either a County- or Region-level report, which will allow the End User to select from one of two dimension types: geographic information or clinical ([Screenshot 105](#)). The Region-level report types will allow the End User to view the same metrics reported as the County-level reports ([Screenshot 106](#)).

#### Screenshot 105: Utilization County Report Multistep Report Generation Process

1	Hospital <input type="radio"/> Population <input checked="" type="radio"/>	2	County <input checked="" type="radio"/> Region <input type="radio"/>	3	Locale <input type="radio"/> Clinical <input checked="" type="radio"/>	4	Major Diagnosis Category <input type="text"/>	5	All <input type="text"/>
---	---	---	---	---	---	---	---	---	--------------------------

#### Screenshot 106: Utilization Report by Region

1	Hospital <input type="radio"/> Population <input checked="" type="radio"/>	2	County <input type="radio"/> Region <input checked="" type="radio"/>	3	Locale <input type="radio"/> Clinical <input checked="" type="radio"/>	4	Major Diagnosis Category <input type="text"/>	5	All <input type="text"/>
---	---	---	---	---	---	---	---	---	--------------------------

If the End User selects the geographic information dimension shown in Step 3 of [Screenshot 105](#), they must also select a specific county or all counties as shown in Step 4. After completing all of the steps, a county report will be displayed ([Screenshot 107](#)).

#### Screenshot 107: Utilization by County Report

1	Hospital <input type="radio"/> Population <input checked="" type="radio"/>	2	County <input checked="" type="radio"/> Region <input type="radio"/>	3	Locale <input checked="" type="radio"/> Clinical <input type="radio"/>	4	All <input type="text"/>
---	---	---	---	---	---	---	--------------------------

### County Rates

County rates show use of hospital services by county, such as the number and length of hospital stays for different health conditions or procedures. These rates are based on where patients live, not where the hospitals they visit are located.

View Rates			
All Diagnoses	Sort by:	View by:	Help
Narrow by:	Condition or Topic (A)	Condition or Topic	Select Report to Copy
Condition or Topic	By All Counties		
Select a Condition or Topic			
Condition or Topic	County Number of discharges	County Mean costs in dollars	County Rate of Discharges (Per 1,000 Persons)
TOTAL U.S. in 2012	36,484,850		
TOTAL <a href="#">View combined report</a>	612,029	\$22,976	14.818
<a href="#">Abdominal hernia</a>	3,098	\$32,755	83.201
<a href="#">Abdominal pain</a>	2,973	\$13,788	9.852
<a href="#">Acquired foot deformities</a>	€	€	€
<a href="#">Acute and chronic tonsillitis</a>	674	\$8,005	76.521
<a href="#">Acute and unspecified renal failure</a>	7,600	\$27,484	170.453
<a href="#">Acute bronchitis</a>	3,510	\$11,335	144.952
<a href="#">Acute cerebrovascular disease</a>	6,881	\$28,429	136.778
<a href="#">Acute myocardial infarction</a>	8,134	\$53,366	149.999
<a href="#">Acute posthemorrhagic anemia</a>	176	\$16,026	13.181

In the County and Regions Rates reporting path, End Users can choose to see results by individual counties or combined counties or region, with common groupings provided for ICD-9-CM codes (MDC, DRG, CCS for conditions, or CCS for procedures). To access maps of the data, End Users can select the “View Map” tab and a specific condition or procedure.

The County and Region Rates reporting path is only available when local inpatient discharge data are loaded. When setting up your MONAHRQ-generated website, you can select the denominator used in the county rates pathway as 1,000, 10,000, or 100,000 people or discharges. It may be more appropriate to use larger denominators for larger datasets. Note that the AHRQ QI uses a per population denominator of 100,000. To generate a report on a Major Diagnosis Category and diseases and disorders by all counties ([Screenshot 108](#)), the End User should select the “Clinical” radio button in Step 3, with the option of selecting the Major Diagnosis Category and diseases and disorders.

### Screenshot 108: Utilization County Report by Major Diagnosis Category

## County Rates

County rates show use of hospital services by county, such as the number and length of hospital stays for different health conditions or procedures. These rates are based on where patients live, not where the hospitals they visit are located.

View All

Narrow by:

Hospital County

Select a County

ZIP Code

View Rates

Sort by:

Patient County (A to Z)

Select Report to Copy

Help

### By All Major Diagnostic Category

Patient County	County Number of discharges	County Mean costs in dollars	County Median cost in dollars	County Rate of Discharges (Per 1,000 Persons)
TOTAL U.S. in 2012	36,484,850			
TOTAL <a href="#">View combined report</a>	623,051	\$24,115	\$12,466	315.119
<a href="#">Addison County</a>	25,827	\$24,563	\$12,646	695.078
<a href="#">Belknap County</a>	26,043	\$23,647	\$12,483	423.326
<a href="#">Bennington County</a>	25,891	\$24,253	\$12,557	697.382
<a href="#">Caledonia County</a>	25,760	\$24,417	\$12,456	807.802
<a href="#">Carroll County</a>	25,839	\$24,218	\$12,517	523.014
<a href="#">Cheshire County</a>	26,279	\$24,111	\$12,393	334.224
<a href="#">Chittenden County</a>	25,852	\$24,268	\$12,306	162.242
<a href="#">Coos County</a>	26,067	\$23,703	\$12,492	785.174

To generate the stratification version of the Major Diagnosis Category report ([Screenshot 109](#)), select the “View Combined Report” link, as shown in [Screenshot 108](#).

## Screenshot 109: Utilization County Stratification Report

View Rates

All Diagnoses

Narrow by:

Condition or Topic

Select a Condition or Topic

Select Report to Copy

Help

By All Counties

Back to summary

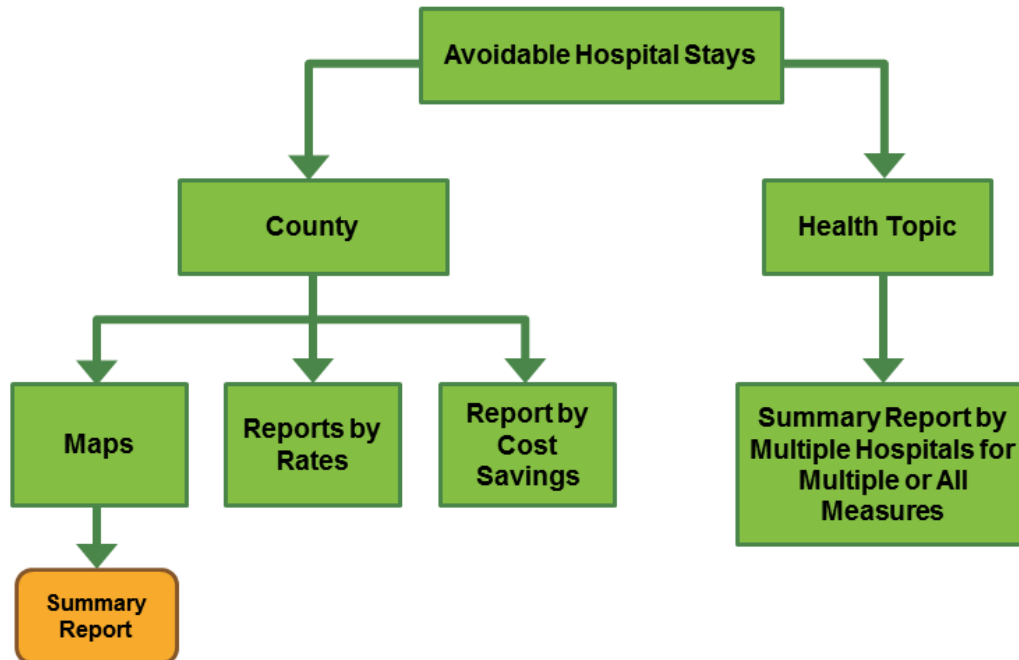
Condition or Topic	County Number of discharges	County Mean costs in dollars	County Rate of Discharges (Per 1,000 Persons)
TOTAL U.S. in 2012	36,484,850		
Age Group			
<18	122,169	\$9,957	8,604.057
18-44	167,181	\$19,722	7,724.841
45-64	128,331	\$28,026	8,369.049
65+	194,348	\$31,484	27,185.34
Gender			
Male	255,831	\$27,515	2,663.852
Female	356,198	\$20,875	3,539.574
Race/Ethnicity			
Missing	5,304	\$26,273	-
White	399,636	\$25,421	22,696.28
Black	22,789	\$25,068	4,281.232
Hispanic	145,369	\$17,726	303,484.3
Asian or Pacific Island	9,067	\$18,064	226,675
Native American	21,587	\$24,227	273,253.2



### 10.3.2 Avoidable Hospital Stays Reporting Path

The End User can generate reports utilizing two subpaths under “Avoidable Hospital Stays.” The County subpath reports the avoidable hospital stays for selected conditions, for all counties (see [Figure 9](#)). The Health Topic subpath shows the rates of avoidable hospital stays across a selected county for each of the conditions included in MONAHRQ.

**Figure 9: Avoidable Hospital Stays Reporting Path**



#### 10.3.2.1 Avoidable Hospital Stays County Report

By default, the Avoidable Hospital Stays reporting path displays results for avoidable hospital stays by county ([Screenshot 110](#)). The End User can change the report view to a map by selecting the respective tab in the report.

The “Maps” and “By Rates” views are only available when AHRQ QI™ area-level data are loaded. The “By Cost Saving” view is only available when AHRQ QI area-level data includes costs.

## Screenshot 110: Avoidable Hospital Stays Reporting Subpaths: County or Condition

**1 Find By:**  
Condition/Topic   
Specific County

**2 Choose Condition**  
Heart Conditions

**3 Choose a measure**  
How often patients are admitted to a hospital for problems related to high

### Avoidable Hospital Stays

An avoidable hospital stay is one that might have been avoided with better medical care outside of the hospital. For example, a diabetes patient who receives good care from her primary care physician might not need a hospital stay for diabetes complications. Hospital stays like these are not always avoidable, but they are potentially avoidable with good quality health care.

[View Rates](#) [View Map](#)

Sort by:  
County Name (A to Z)

[Select Report to Copy](#)

County	Number of Hospital Stays	Number of County Residents	Yearly Rates of Hospital Stays		Yearly Cost Savings per Percentage Reduction in Number of Avoidable Stays						Custom Percentage
			Observed Rate per 100,000 Residents	Risk-Adjusted Rate per 100,000 Residents	10%	20%	30%	40%	50%		
Addison County	68	28,369	239.70	251.34	\$96,208.78	\$192,417.56	\$288,626.34	\$384,835.12	\$481,043.90	\$	<input type="text"/> Go
Baldwin County	65	47,704	136.26	126.38	\$86,939.30	\$173,878.59	\$260,817.88	\$347,757.18	\$434,696.48	\$	<input type="text"/> Go
Bennington County	85	28,851	294.62	261.91	\$117,716.58	\$235,433.17	\$353,149.76	\$470,866.34	\$588,582.92	\$	<input type="text"/> Go

### 10.3.2.2 Avoidable Hospital Stays County Profile Report

The Avoidable Hospital Stays County Profile report displays detailed statistics by county for any or all of the selected measures, including risk-adjusted rates and cost savings ([Screenshot 111](#)).

## Screenshot 111: Avoidable Hospital Stays County Profile Report

[Home](#) [Quality Ratings](#) [Service Use Rates](#) [Resources](#) [About Us](#)

[Avoidable Hospital Stays](#) [Service Use](#)

**1 Find By:**  
Condition/Topic   
Specific County

**2 Choose County**  
Essex County

**3 Choose Condition(s)**  
Choose the conditions you would like to compare from the table below. You may select one or many. When you are finished click 'Search'.  

☐ Procedure Rates ☐ Death and read subtopic ☐ Diabetes  
☐ Other Conditions ☐ Chronic Lung Conditions ☒ Heart Conditions  
☒ Summary scores ☐ Patient Safety

[Search](#)

### Avoidable Hospital Stays

An avoidable hospital stay is one that might have been avoided with better medical care outside of the hospital. For example, a diabetes patient who receives good care from her primary care physician might not need a hospital stay for diabetes complications. Hospital stays like these are not always avoidable, but they are potentially avoidable with good quality health care.

Essex County

[Select Report to Copy](#)

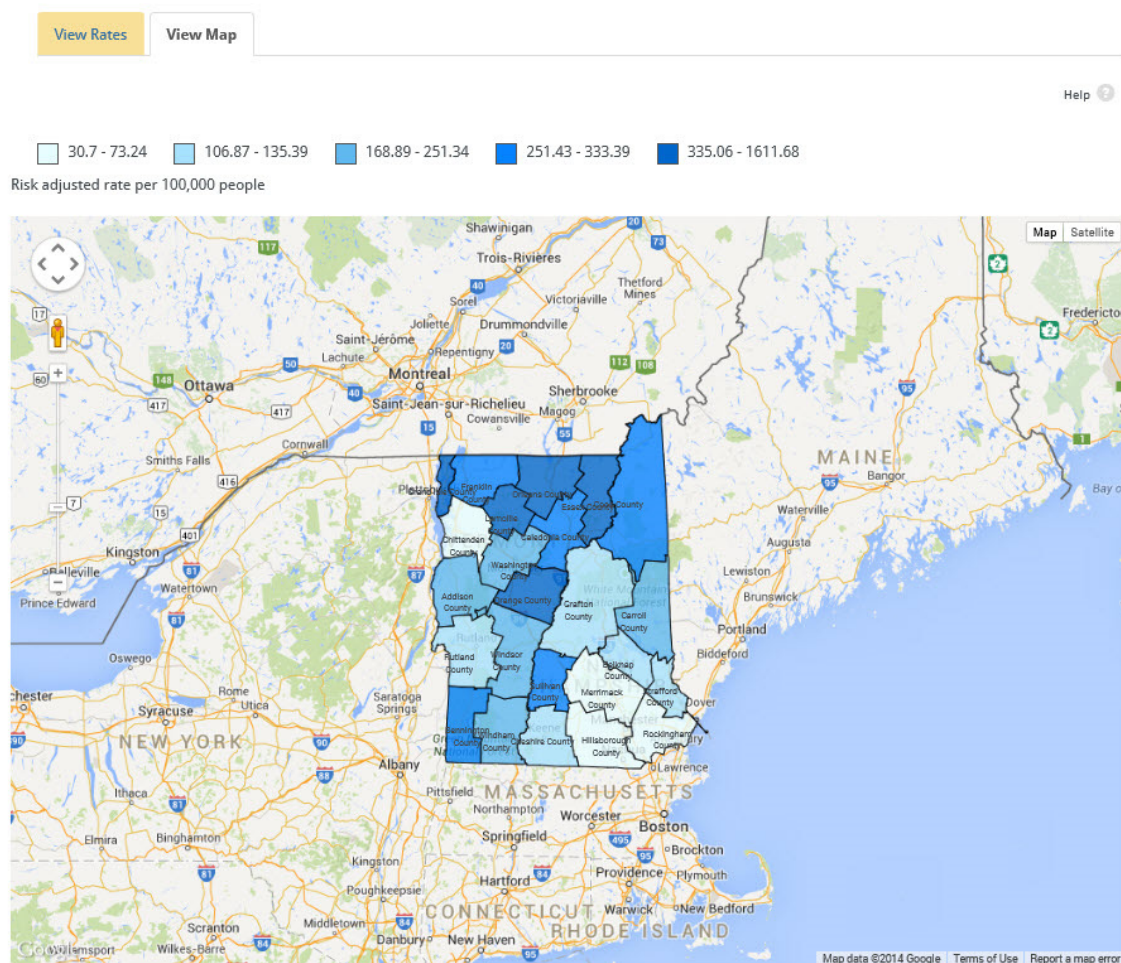
#### Summary scores

Measure	Rates				Cost Savings						Custom Percentage <input type="text" value="0.0"/>
	Numerator	Denominator	Observed Rate	Risk-Adjusted Rate	10%	20%	30%	40%	50%		
How well providers prevent patients from having serious health problems	2,144	5,027	42,649.69	37,471.24	115,017.02	230,034.05	345,051.07	460,068.10	575,085.12		
How often patients are	994	5,027	19,773.22	18,120.32	58,522.74	117,045.49	175,568.23	234,090.98	292,613.72		

### 10.3.2.3 Avoidable Hospital Stays Map Report

End Users can view the Avoidable Hospital Stays Map report by selecting the “View Map” tab. A map will display the geographic region, shading the selected counties in a red hue. The map will show the rate of avoidable hospital stays per 100,000 or 1,000 people or discharges, depending on the measures for each county; lighter shades of blue indicate a lower rate ([Screenshot 112](#)).

#### Screenshot 112: Avoidable Hospital Stays Map Report



## CHAPTER 11. TROUBLESHOOTING

This chapter identifies common questions asked by both new and experienced MONAHRQ® Host Users. The questions and answers should be used as a reference while you are setting up and maintaining your MONAHRQ desktop application and generated websites.

### 11.1 Software Installation and Database Creation

**Question:** How do I create a database?

**Answer:** When you launch the MONAHRQ application for the first time, you will be directed to the “Welcome” screen. At this time, you will need to establish a connection between the MONAHRQ application and your SQL Server® database. Click on the “Settings” action icon to access the

Database Manager screen. Within this screen, you will need to input your server name, create a database name, and select the authentication type to be used. After the required information is entered and selected, you can click the “Create” button to establish the connection between your MONAHRQ application and database and create the database. A popup message will confirm the connection has been established. You can also change your database on the Database Manager screen. For additional information about creating your database, refer to [Section 8.1](#), “Database Manager Settings.”

**Question: What are the system requirements for SQL Server and Microsoft® .NET?**

**Answer:** To run MONAHRQ, your computing environment must have the proper SQL Server and .NET software versions installed. For additional information about the proper software versions, including links to download the software, refer to [Section 2.1](#), “Preparing the Computing Environment.”

## 11.2 Data and Datasets Library

**Question: What types of data do I need to use MONAHRQ to generate my reports?**

**Answer:** MONAHRQ provides several reporting paths that require different data sources. You will only need to load the data that will be used in the reporting paths of interest. [Section 1.3](#) of this document provides useful information about how reports can be used based on the datasets you have available.

**Question: Where can I access the latest Hospital Compare and Medicare Provider Charge Data files?**

**Answer:** If you are planning to display the costs, charges, and payments for the top 25 Diagnosis Related Groups by volume in the Hospital Profile reports in your MONAHRQ-generated website, download the file containing the most recent data from: [http://monahrq.ahrq.gov/monahrq\\_data.shtml](http://monahrq.ahrq.gov/monahrq_data.shtml).

If you are planning to display CMS Hospital Compare quality measures in your MONAHRQ-generated website, download the file containing the most recent data from: [http://monahrq.ahrq.gov/monahrq\\_data.shtml](http://monahrq.ahrq.gov/monahrq_data.shtml). You should download these data here, not from the Hospital Compare website. It is the same data; however, it is reformatted for use in MONAHRQ. Updated files are available quarterly.

**Question: I am creating Inpatient Discharge and ED Treat-and-Release input files to import into MONAHRQ. Where can I find information about the file layout and variables to map to my MONAHRQ database?**

**Answer:** Useful information about the file layout, required fields, and other data preparation tips are provided in the Appendix section of this document. Specifically, [Appendix H](#) includes information about the Inpatient Discharge file, and [Appendix I](#) includes information about the ED Treat-and-Release file.

During the dataset import process, MONAHRQ will execute an auto-mapping process that will map the field data element names in your input file to the expected values in your MONAHRQ database tables. Utilizing the recommended variable names in the “Supported Data Element Names” column in the tables found in [Appendices H](#) and [I](#) will reduce the number of fields that you will need to manually map during the dataset import process. Additional information about mapping datasets can be found in [Section 4.2.3](#).

## 11.3 Measures and Measures Library

### **Question: What is the Measures Library and how does it work?**

**Answer:** The Measures Library is a repository that includes a base set of standard, preassigned topics and measures for the Hospital Compare database, AHRQ Quality Indicator™ (QI) measures (Area, Provider, and Composite measures), Hospital Inpatient Discharge data, and Emergency Department (ED) Treat-and-Release dataset. Within this library, you can manage the measures reported on your MONAHRQ websites. The library screen displays attributes associated with each measure, such as the website name to which you have assigned the measure, topics and subtopics, and the dataset source. If you need to edit measures or assign measures to topics, you can make those changes by using the features on this screen. For additional information about how to manage and use your Measures Library, refer to [Section 5.1](#), “Managing and Customizing Measures.”

### **Question: How do I select measures for my generated website and reports?**

**Answer:** When you are creating your website with the “Create a Website” feature, you will be able to select the datasets, measures, and reports to include in your website. The measures that will be available on your website are dependent on the datasets that you select to use and the reporting paths you select to display. The software will automatically filter out any measures that are not associated with the datasets and reports that you have selected. Thus, your generated website will only contain the measures and reports that you have selected during the “Create a Website” process.

### **Question: Where can I find information on measures available in MONAHRQ?**

**Answer:** A list of all measures available in MONAHRQ 5.0 can be found on the MONAHRQ website ([http://monahrq.ahrq.gov/MONAHRQ\\_50\\_Measure\\_List.xlsx](http://monahrq.ahrq.gov/MONAHRQ_50_Measure_List.xlsx)). The link can also be found in [Appendix B](#) of this document.

## 11.4 Reports and Reports Library

### **Question: What kind of reports will be displayed in my generated website?**

**Answer:** As the administrator of the MONAHRQ application, you have the ability to select the types of reports to be displayed on your generated website. During the report selection process, you should consider the audience type, datasets available, and the overall goal of your website and organization. For additional information about this decisionmaking process, refer to [Section 1.3](#). This section provides useful information about the report types available, the required datasets to source the reports, and recommendations on the types of reports your audience may be interested in seeing on your website. For additional information about establishing and managing your Reports Library, refer to [Chapter 6](#), “Building and Using Your Reports Library.”

### **Question: I do not see the expected measures in my reports. How can I figure out what measures will be included?**

**Answer:** To confirm what measures will be included in your website, refer to the “Define Measures” tab in the website creation page for the associated website. Within the display, the “Websites” column will identify the website for which the measure will be displayed. If the website name is not displayed in this column for the desired measure, select the checkbox for the measure and click the “Save” button. The website name will then be displayed in the “Website” column, and the measure should be reflected in your website after you re-publish it.

**Question: I would like to provide quality- and utilization-related information on my website to users for specific hospitals in their region. How do I create this report?**

**Answer:** The Hospital Profile report, new to MONAHRQ with version 5.0, provides quality and utilization metrics, as well as useful information about the hospital's characteristics and a map of the location. This report is available for "Consumer" and "All Audience" audience types. The Medicare Provider Charge data are required to produce this report. For additional information about the Hospital Profile report, refer to [Section 10.2.2.2](#).

## 11.5 Create and Customize Website

**Question: What is the difference between a home page and a banner image?**

**Answer:** Within the "Customize Website" screen, you have the option to customize the look and feel of your website theme by uploading a custom banner and home page image. The website banner image is the main image displayed below the reporting tabs and header title. The home page content image is smaller than the website banner image, and the subject matter can be related to information you are displaying on your website. For additional information and examples of the placement of the image types on your website, refer to [Section 7.2.3](#), "Displaying Logos and Images."

**Question: Do I need to resolve all of the warnings and errors identified by the dependency check?**

**Answer:** The dependency check reports any errors and warnings that may require resolution before your generated website can be published. The warnings are used to alert you to improvements that can be made to your website by resolving or updating your selections. Resolving *warnings* is not required to publish your website. However, all *errors* must be resolved before the system will allow you to publish your website. Within the dependency check log, a link will be provided directing you to the screen where the error will need to be resolved. After resolving the errors and any warnings, re-run the dependency check to confirm that you can proceed with publishing your website. For additional information about the dependency check process, refer to [Section 7.3](#), "Publishing Your Website."

**Question: Can I make changes to my generated website after I publish it?**

**Answer:** Yes, as the administrator of your generated website, you have the ability to update, add, or remove reports, measures, and customizations selected for your website. Within the libraries, you can add or remove datasets and edit measures and report attributes. Within the "Create a Website" feature, you can further select and filter the datasets, reports, and measures on a site-by-site basis. After any updates and changes are made, you will need to re-run the dependency check and repeat the publishing steps. After completing all of the steps, your generated website will reflect the changes you made.



## APPENDIX A: HISTORY OF THE MONAHRQ® PROJECT

The MONAHRQ project, first conceived in 2008, was based on two popular and widely used AHRQ data tools and products: the Healthcare Cost and Utilization Project (HCUP) and the AHRQ Quality Indicators™ (QIs). MONAHRQ was also shaped by AHRQ's extensive expertise in quality measurement and public reporting.

**Healthcare Cost and Utilization Project:** HCUP is the largest all-payer database in the United States. HCUP collects voluntarily submitted all-payer hospital administrative data from 47 States and includes 97 percent of all hospital discharges in the country (<http://www.hcup-us.ahrq.gov>). The HCUP project uses these data to create three nationwide datasets (Nationwide Inpatient Sample, Kids' Inpatient Database, and Nationwide Emergency Department Sample) and enriched State datasets (State Inpatient Databases, State Emergency Department Databases, State Ambulatory Surgery Databases) that are used by researchers around the country. Parts of the MONAHRQ-generated website are modeled after HCUPnet—HCUP's online aggregate data query system. Although HCUP data were used in the development of MONAHRQ, HCUP data are not used to create MONAHRQ-generated websites. For more information about restrictions on the use of each HCUP database, go to <http://www.hcup-us.ahrq.gov/databases.jsp>.

**AHRQ Quality Indicators:™** AHRQ Quality Indicators (QIs) are a set of standardized, evidence-based health care quality measures that can be used with hospital inpatient discharge data (<http://www.qualityindicators.ahrq.gov>). Approximately half of the AHRQ QIs are endorsed by the National Quality Forum (NQF). To support the use of AHRQ QIs, AHRQ makes the technical specifications available, in addition to two software tools for calculating indicators directly from data. The first tool is the AHRQ QI software for Windows® (WinQI), which provides an intuitive, easy-to-use interface to calculate indicator results. The second tool is the AHRQ QI software for SAS® which consists of SAS statistical analysis programs (SAS Institute Inc., Cary, NC) to calculate indicator results.

The first three releases of MONAHRQ included WinQI as an embedded function. Starting with MONAHRQ 4.0, WinQI was separated from MONAHRQ to allow more flexibility. Now organizations using MONAHRQ can import their own precalculated measure results, including those generated separately from any version of WinQI or the AHRQ QI software for SAS. If an organization does not have its own data, or chooses not to publish those data, it can use MONAHRQ to generate websites using only Hospital Compare data.

The current release, MONAHRQ 5.0, is a major redesign of both the website-generating software and the resulting MONAHRQ websites and report options. The 5.0 redesign reflects the state of the art in the use of widely available data, website design, and public reporting.

The release history of MONAHRQ and the features of each release are summarized in [Table 13](#).

**Table 13: Versions of MONAHRQ**

Version of MONAHRQ	Features/Enhancements
MONAHRQ 1.0	<p>The ability to load local inpatient discharge data to generate a website that—</p> <ul style="list-style-type: none"> <li>• Reports on utilization, costs, and rates</li> <li>• Can calculate and report on AHRQ Inpatient Quality Indicators (IQIs), Prevention Quality Indicators (PQIs), Pediatric Quality Indicators (PDIs), and Patient Safety Indicators (PSIs)</li> </ul>
MONAHRQ 2.0	<p>The preceding features, plus—</p> <ul style="list-style-type: none"> <li>• The ability to report Centers for Medicare &amp; Medicaid Services (CMS) Hospital Compare measure results</li> <li>• Additional IQI, PQI, and PSI indicators</li> <li>• Streamlined web page design to facilitate use</li> </ul>
MONAHRQ 3.0	<p>The preceding features, plus—</p> <ul style="list-style-type: none"> <li>• An updated, embedded version of WinQI</li> <li>• Updated cost-to-charge ratio data</li> <li>• AHRQ QI composite indicators</li> <li>• CMS Hospital Compare measure results for surgical patient safety, imaging, and outpatient measures</li> <li>• A health topic on nursing-sensitive care</li> <li>• Enhanced suppression logic, including the ability to suppress results based on denominator size</li> <li>• The ability for MONAHRQ Host Users to define their own diagnosis-related group (DRG) and Major Diagnostic Category groupings</li> <li>• The ability to save and reload hospital information</li> <li>• The ability for Host Users to save and reload the customization and configuration options they have selected</li> </ul>
MONAHRQ 4.0	<p>The preceding features, plus—</p> <ul style="list-style-type: none"> <li>• The ability for Host Users to employ multiple years of cost-to-charge ratio data to calculate and report costs</li> <li>• Additional CMS Hospital Compare measures (see the complete list at <a href="http://monahrq.ahrq.gov/MONAHRQ_50_Measure_List.xlsx">http://monahrq.ahrq.gov/MONAHRQ_50_Measure_List.xlsx</a>)</li> <li>• Redesigned software</li> </ul> <p>The following features were removed:</p> <ul style="list-style-type: none"> <li>• Embedded WinQI software (including estimated cost savings calculation tool), enabling organizations to determine which version of WinQI they want to use with MONAHRQ</li> </ul>
MONAHRQ 4.0.1	<p>The preceding features, plus—</p> <ul style="list-style-type: none"> <li>• The ability to report estimated cost savings by using a stand-alone software program</li> <li>• Updated ZIP Code data embedded into MONAHRQ</li> <li>• The ability to create customized footnotes in the Hospital Utilization and County Rates paths</li> </ul>



Version of MONAHRQ	Features/Enhancements
MONAHRQ 4.1	<p>The preceding features, plus—</p> <ul style="list-style-type: none"> <li>• Enhanced cost reporting: <ul style="list-style-type: none"> <li>— Embedded cost savings calculator to facilitate reporting of cost savings estimates</li> <li>— Elevated visibility of estimated cost savings reports</li> </ul> </li> <li>• The ability to report on Emergency Department (ED) utilization if MONAHRQ Host Users import an ED treat-and-release data file</li> <li>• The use of an optional “ED Services” data element in Inpatient Discharge data to indicate which inpatient stays began in the ED</li> <li>• New CMS Hospital Compare measures related to imaging</li> <li>• New reports showing— <ul style="list-style-type: none"> <li>— Summary pages by hospital</li> <li>— Side-by-side comparisons of up to five hospitals</li> <li>— A summary of hospital utilization by county or region</li> </ul> </li> <li>• The ability to hide links to “MyQI” quality improvement materials</li> <li>• The ability to include search engine optimization elements in a MONAHRQ-generated website</li> <li>• The ability to include a feedback form in a MONAHRQ-generated website</li> <li>• The ability for End Users to save, print, share, and email reports from within a MONAHRQ-generated website</li> <li>• The ability for Host Users to modify the Section 508 compliance elements of their MONAHRQ-generated website</li> <li>• A refined data upload process enabling the use of the Medicare Severity Diagnosis Related Groups (MS-DRGs) Grouper from the National Technical Information Service</li> </ul>

## APPENDIX B: RESOURCES

The following updated resources for MONAHRQ 5.0 are available on the Resources page on the MONAHRQ website at <http://monahrq.ahrq.gov> to complement the MONAHRQ 5.0 Host User Guide:

- **MONAHRQ 5.0 Fact Sheet–**  
([http://monahrq.ahrq.gov/MONAHRQ\\_v50\\_FactSheet.pdf](http://monahrq.ahrq.gov/MONAHRQ_v50_FactSheet.pdf)) Provides an overview of the capabilities of MONAHRQ 5.0.
- **MONAHRQ 5.0 Quick Start Guide–**  
([http://monahrq.ahrq.gov/MONAHRQ\\_v50\\_Quick\\_Start\\_Guide.pdf](http://monahrq.ahrq.gov/MONAHRQ_v50_Quick_Start_Guide.pdf)) Highlights what is new in MONAHRQ 5.0 and guides an experienced MONAHRQ Host User in quickly upgrading to the 5.0 release.
- **MONAHRQ 5.0 Decision Guide–** ([http://monahrq.ahrq.gov/MONAHRQ\\_v50\\_DecisionGuide.pdf](http://monahrq.ahrq.gov/MONAHRQ_v50_DecisionGuide.pdf)) Helps Host Users decide which type of MONAHRQ-generated website to produce.
- **MONAHRQ 5.0 Build 2 Release Notes–**  
(<http://www.ahrq.gov/professionals/systems/monahrq/resources/index.html>) Documents the new features and changes in MONAHRQ 5.0 as compared to earlier versions.
- **MONAHRQ 5.0 Measure List–**  
([http://monahrq.ahrq.gov/MONAHRQ\\_50\\_build\\_2\\_Measure\\_List.xlsx](http://monahrq.ahrq.gov/MONAHRQ_50_build_2_Measure_List.xlsx)) Lists all of the measures available in MONAHRQ 5.0 Build 2, in a spreadsheet format. The measure list includes the default measure description information provided in MONAHRQ 5.0.
- **MONAHRQ 5.0 Informational Presentations–**  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml](http://monahrq.ahrq.gov/monahrq_resources.shtml)) The Resource page includes seven slide sets related to the MONAHRQ 5.0 software and its capabilities and helpful information related to health care measurement and reporting.
  - What Is the Value of Health Care Measurement and Reporting?  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/Value\\_of\\_HealthCare\\_Measurement\\_Reporting.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/Value_of_HealthCare_Measurement_Reporting.pdf))
  - What Is MONAHRQ?  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/What\\_is-MONAHRQ.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/What_is-MONAHRQ.pdf))
  - Why Use MONAHRQ for Health Care Reporting?  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/MONAHRQ\\_Health\\_Care\\_Reporting.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/MONAHRQ_Health_Care_Reporting.pdf))
  - How to Get Started with MONAHRQ  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/MONAHRQ\\_Get\\_Started.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/MONAHRQ_Get_Started.pdf))
  - What Types of Websites and Reports Can MONAHRQ Generate?  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/MONAHRQ\\_Website\\_Report\\_Types.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/MONAHRQ_Website_Report_Types.pdf))
  - Who Can Use MONAHRQ?  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/Who\\_Can\\_Use\\_MONAHRQ.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/Who_Can_Use_MONAHRQ.pdf))
  - Future Plans for MONAHRQ and How to Get Involved.  
([http://monahrq.ahrq.gov/monahrq\\_resources.shtml#pres/MONAHRQ\\_Future\\_Releases.pdf](http://monahrq.ahrq.gov/monahrq_resources.shtml#pres/MONAHRQ_Future_Releases.pdf))

## APPENDIX C: SETTING MONAHRQ® PERMISSIONS

To run MONAHRQ, it is important to set the proper permissions for your Windows® Operating System and Microsoft® SQL Server®. This process often requires working closely with a system administrator or other technical personnel in your organization.

### Verifying and Setting Folder Permissions in the Windows® Operating System

You must have **full control** permissions for the MONAHRQ installed folder in order to run MONAHRQ. With MONAHRQ 5.0, the software installer automatically assigns permissions to the relevant Host Users at the time of MONAHRQ installation, so there is no need to manually set **full control permissions**. Depending upon the system settings, it is possible that the automatic permissions assignment may not complete properly. If you receive a system error when running MONAHRQ, make sure that the permissions are assigned properly. If they are not properly assigned, certain directory permissions must be granted to you or other Host Users who will be running MONAHRQ. These permissions apply only to the files and directories used by MONAHRQ.

The following instructions explain how to verify and, if needed, set the appropriate permissions in your Windows Operating System.

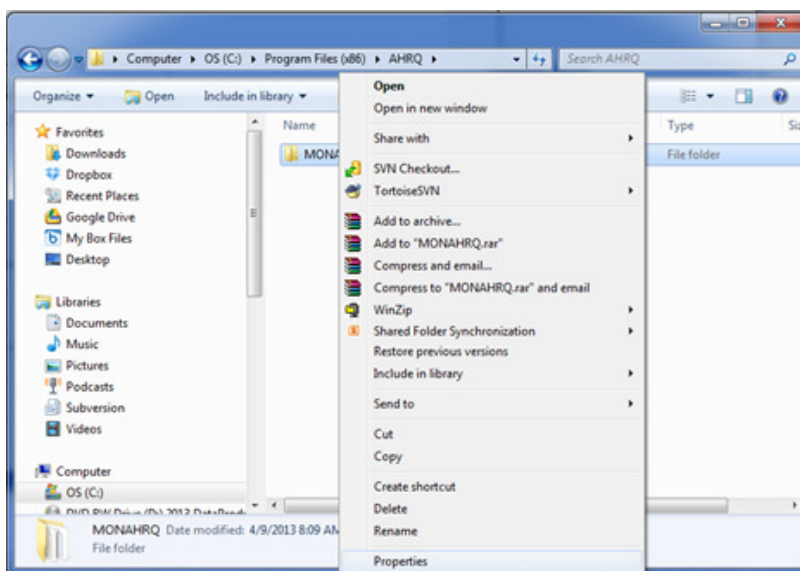
#### Step 1: Find the Installation Directory.

A standard MONAHRQ installation places the software in the directory “C:\Program Files\AHRQ\MONAHRQ\.” To use an alternative installation directory location, you will need to modify the permissions for that directory. The following instructions apply in either case; however, you will need to substitute the name of the alternative installation directory location where the name “MONAHRQ” appears.

#### Step 2: Open the Security Tab.

**Right click** on the MONAHRQ directory to open the context menu ([Screenshot 113](#)).

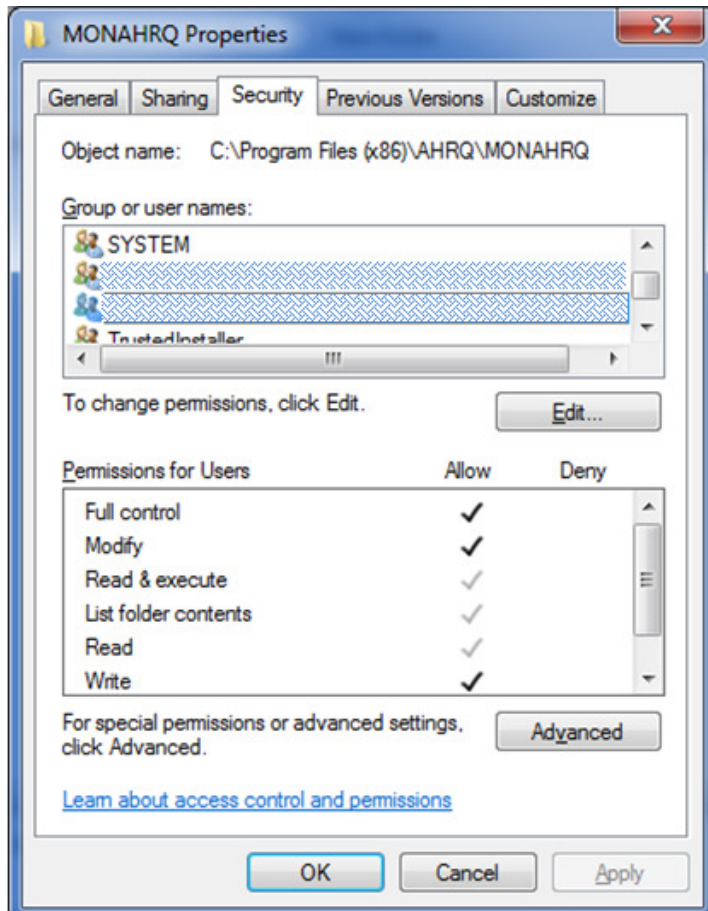
#### Screenshot 113: Context Menu



Select **Properties**.

A new window will pop up, titled **MONAHRQ Properties** ([Screenshot 114](#)).

#### Screenshot 114: MONAHRQ Properties Popup Window



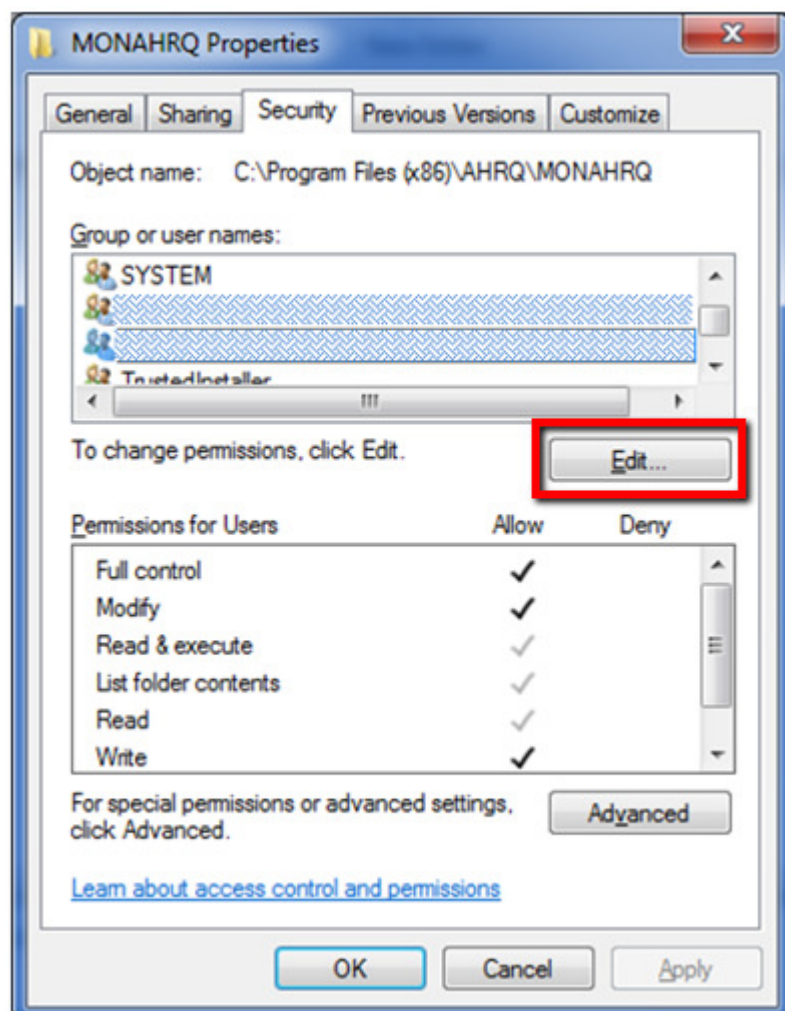
Select the **Security** tab, find the entry that lists your user name in the “Group or user names” window, and single click to select and highlight the user. The **Permissions for Users** window should have a check mark in the “Allow” column. If there is no check mark in this column, it means the installer failed to assign the **full control** privileges to you in the MONAHRQ folder. In this case, you will need to set up the permissions manually. Click the **Advanced** button to set up those permissions.

**NOTE:** If the security tab is not present, you will need to contact your information technology (IT) administrator for further assistance.

**Step 3** is required only if you need to manually set up the folder permissions, if the automatic permissions were not correctly setup by the MONAHRQ installer.

**Step 3:** Manually configure security permissions ([Screenshot 115](#)).

**Screenshot 115: Security Settings Popup Window**

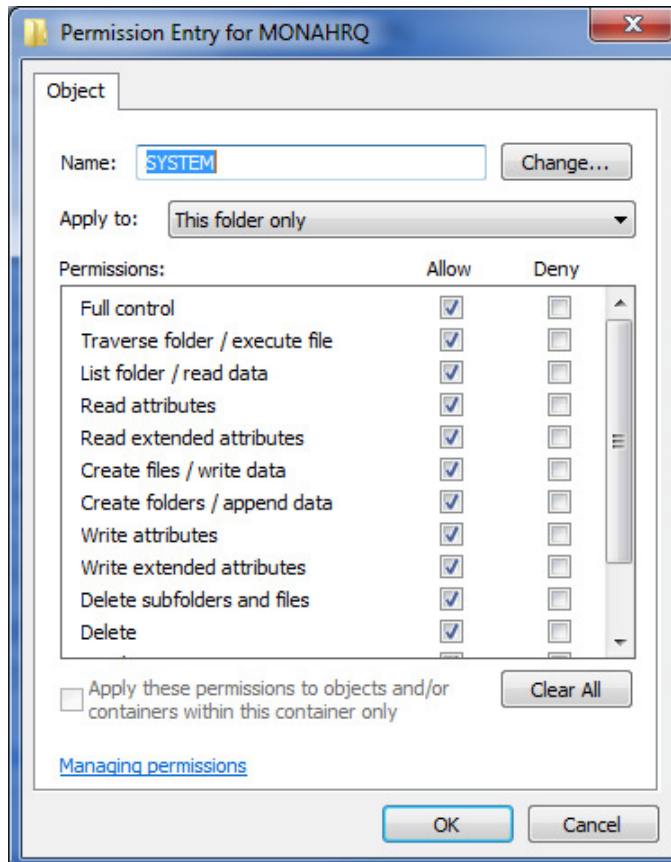


On [Screenshot 115](#), find the entry that lists your user name in the “Properties” window.

**Single click** to highlight the entry. Click the **Edit** button.

A new popup window titled **Permission Entry for MONAHRQ** will appear ([Screenshot 116](#)).

### Screenshot 116: Permission Entry Popup Window



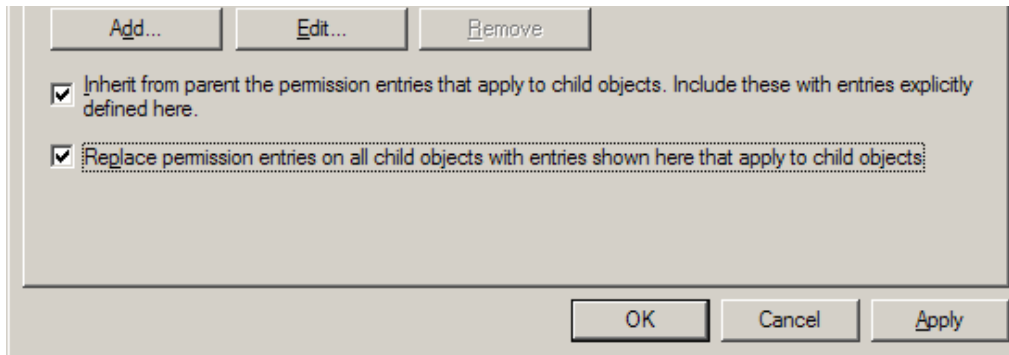
In the “Permissions” window, find the row entry called “Full Control.”

Select the **checkbox** under the column labeled “Allow.” Click the **OK** button to close this popup window.

**NOTE: If you are unable to check “Full Control,” your IT administrator will need to provide the necessary permissions.**

This will return you to the permission settings window ([Screenshot 117](#)).

### Screenshot 117: Advanced Security Settings Popup Window



Select the checkbox labeled **“Replace permission entries on all child objects...”** and click the **Apply** button. Click the **OK** button to close this popup window.

You have now successfully set the permissions in your Microsoft Windows Operating System to run MONAHRQ.

### Setting Permissions in Microsoft SQL Server

MONAHRQ has been tested with the following versions of Microsoft SQL Server (Note: *Other versions of SQL Server may not behave as expected*):

- SQL Server 2008
- SQL Server 2008 Express
- SQL Server 2008 R2 Express
- SQL Server 2012 Express
- SQL Server 2012 Standard

Proper installation of MONAHRQ requires that certain permissions be provided during initial setup of the Microsoft SQL Server or SQL Server Express database. These permissions include the ability to create and delete databases.

Please follow the instructions below to set permissions in your SQL Server database for proper operation of MONAHRQ. These instructions apply to both SQL Server and SQL Server Express.

#### **Step 1: Connect to the SQL Server Instance Using SQL Server Management Studio**

Microsoft SQL Server Management Studio (SSMS) is the primary tool for interfacing with the SQL Server. You may download it from Microsoft at the following URL:

[http://download.microsoft.com/download/6/7/4/674A281B-84BF-4B49-848C-14873B22F977/SQLManagementStudio\\_x86\\_ENU.exe](http://download.microsoft.com/download/6/7/4/674A281B-84BF-4B49-848C-14873B22F977/SQLManagementStudio_x86_ENU.exe)

You may need the assistance of your IT administrator to install and use this software.

Open the SQL SSMS application and connect to the database server that was specified during installation. The default database name is “SQLEXPRESS” ([Screenshot 118](#)). If you specified a server different from the default, use the server name that you specified.



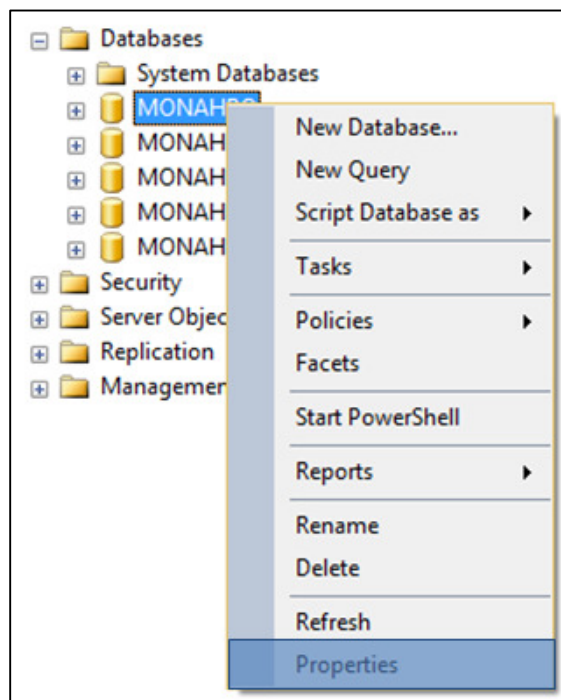
**Screenshot 118: SQL EXPRESS Default**



**Step 2: Set Database Creation Permissions**

You will see a popup window titled **Microsoft Server Management Studio** ([Screenshot 119](#)).

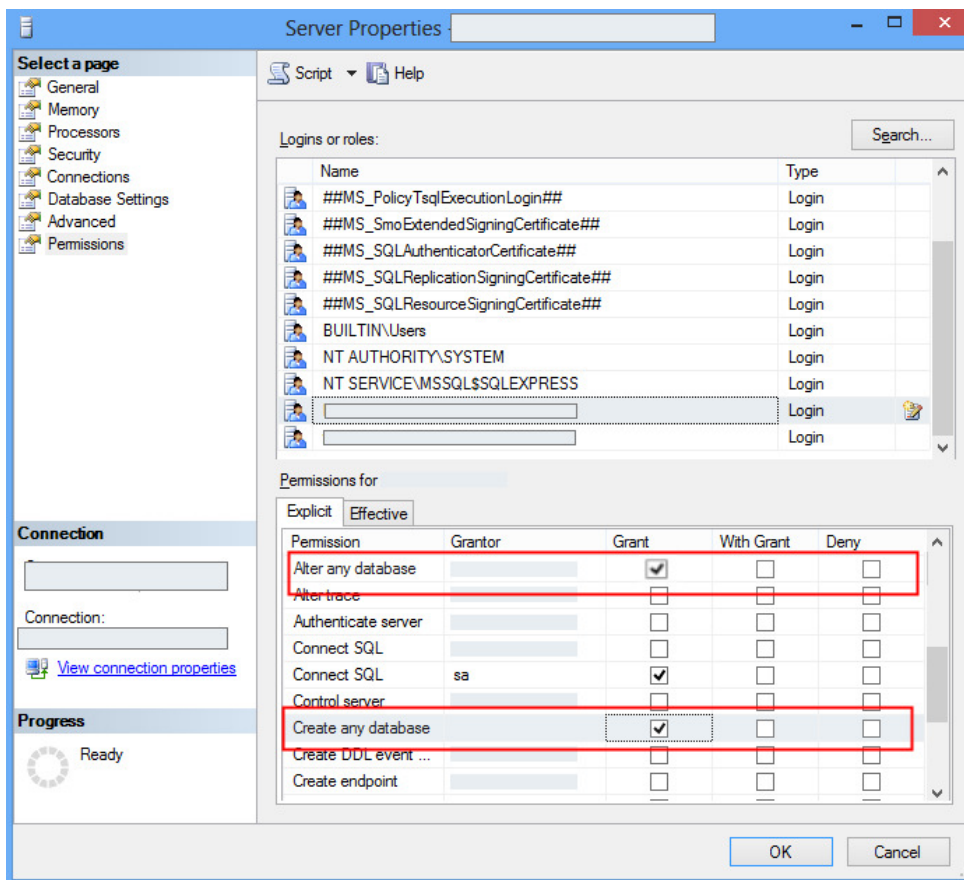
**Screenshot 119: Microsoft Server Management Studio Popup Window**







## Screenshot 121: Database Permissions Popup Window



Locate the “Permissions” list in the lower right portion of the popup window shown in [Screenshot 121](#). Select the **Explicit** tab. Then find the following two rows in the list:

1. “Create any database”
2. “Alter any database”

Select the **checkbox** under the column labeled “Grant” in each of these two rows. Click the **OK** button to save the changes and close the popup window.

**NOTE: If you are unable to change the permissions, please contact your IT administrator for assistance.**

You have now successfully set the necessary permissions in your SQL Server database to run MONAHRQ.

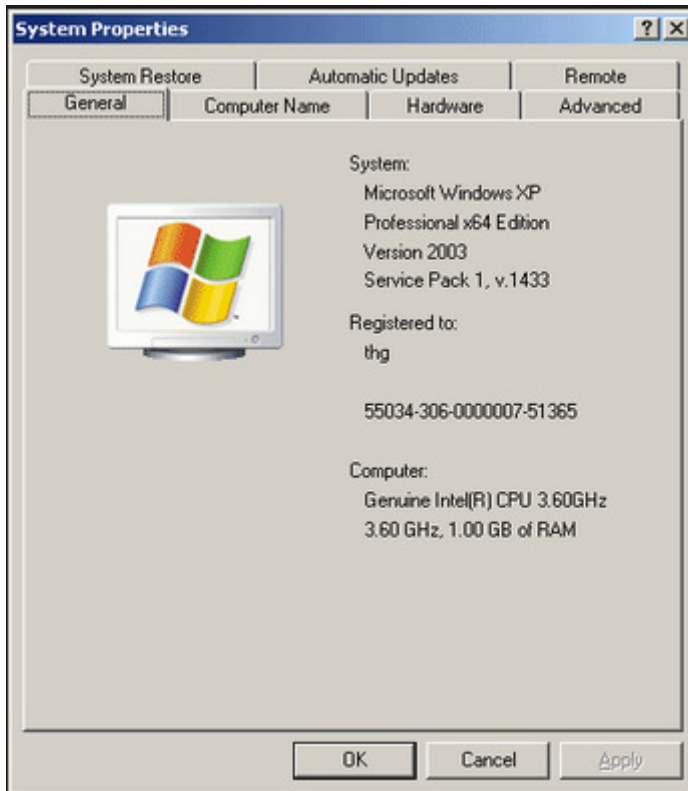
### Additional Information

If the person installing MONAHRQ is *not* the person who will be using MONAHRQ, or if there will be more than one person using MONAHRQ on a single computer, then the **System Administrator** will need to add users to the "MONAHRQ" database. This can be done with a remote SQL Server Manager or by installing a local copy of the SQL Server Management Studio Express Edition and using it to add the required users.

## APPENDIX D: DETERMINING YOUR SYSTEM TYPE

To determine if you have a 32-bit or 64-bit operating system in your personal computer (PC), go to **My Computer** from the Start Menu, right click and select Properties. A popup box displaying your version of Windows® will appear. Under “System” or “System type,” if it says 64-bit or x64, then your system is 64-bit. [Screenshot 122](#) shows an example of the Properties dialog box for a system that uses the 64-bit version.

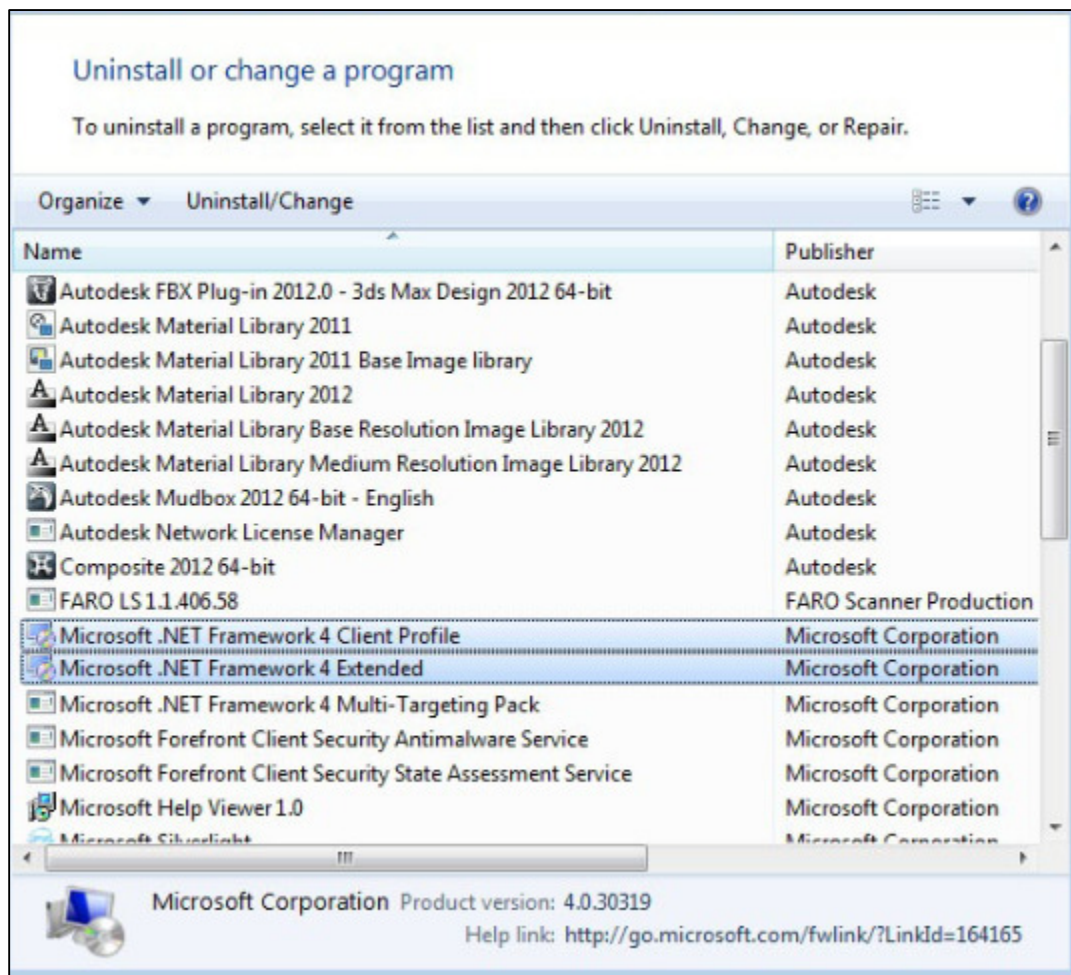
**Screenshot 122: Properties Dialog Box for 64-Bit Version**



## APPENDIX E: INSTALLING MICROSOFT® .NET

To check that Microsoft .NET 4.0 Framework is installed on your personal computer (PC), open the **Windows® Control Panel** and use the Programs utility to view a list of software programs installed on your PC. You can access the Control Panel by going to the Windows Start Button and then selecting the “Settings” option. Scroll down the alphabetical list of programs until you reach Microsoft .NET Framework 4 Client Profile and Microsoft .NET Framework 4 Extended. ([Screenshot 123](#)). There may be several entries for the Microsoft .NET Framework. For MONAHRQ® to work properly, you will need the full installation of .NET 4.0 Framework that includes .NET Framework 4 Client Profile and .NET Framework 4 Extended. MONAHRQ 5.0 is also compatible with the later versions of Microsoft .NET Framework, such as 4.5.

### Screenshot 123: Microsoft .NET Framework



If you do not have the Microsoft .NET 4.0 Framework installed, you can download the installation package for the Microsoft .NET Framework from the MONAHRQ download website ([http://monahrq.ahrq.gov/monahrq\\_software.shtml](http://monahrq.ahrq.gov/monahrq_software.shtml)) or the Microsoft website. Note that the same installation package works for 32-bit and 64-bit systems. Select and save the version, then run the file. Restart your computer after installing the .NET framework.

## APPENDIX F: PREPARING STANDARD DATA FILES

This appendix provides detailed instructions about how to prepare the inpatient discharge data, emergency department (ED) treat-and-release data, Centers for Medicare & Medical Services (CMS) Hospital Compare measures, AHRQ Quality Indicators™ data, and Medicare Provider Charge Data: Inpatient to be loaded into MONAHRQ®. It also includes an overview of each type of data.

### Inpatient Discharge Data

MONAHRQ uses inpatient discharge data that includes information about patient and hospital demographics, diagnosis codes, procedure codes, and information about the admission, payer(s), and discharge. These data are used to populate two MONAHRQ paths: (1) Hospital Utilization and (2) County Rates of Hospital Use. The software is designed for processing one **calendar year** of data at a time. The software enables the loading of local data through a simple “point and click” process for mapping your local data elements and value codes to MONAHRQ formats.

The local inpatient discharge data file should be in one of three common applications or formats for use within MONAHRQ:

- Text (comma-separated values [CSV])
- Microsoft® Access® database
- Microsoft® Excel® spreadsheet

Two key formatting issues are:

- Each row of data represents a separate discharge record.
- Each column of data represents a single data element for all discharges.

CSV files use commas to separate the data values. If there are commas within any data values (for example, “Private, incl. HMO”), you will need to insert double quotes around each data element. An exception is the data element “Total Charge.” Many data elements in inpatient discharge data have leading zeros, and applications handle those leading zeros differently. For Excel files, for example, it is recommended that all appropriate fields or cells be formatted as text to ensure full conversion of the data.

A local inpatient discharge data file contains data element-specific names, meanings, and formats according to the coding conventions in a given organization. The data need to be mapped to the specific names, meanings, and format of data elements used by MONAHRQ. The data elements in MONAHRQ are similar but not identical to the Uniform Bill (UB-04). MONAHRQ’s Defining Field Values Screen provides the opportunity to map local data element values to the values used in MONAHRQ.

In order to generate the Emergency Department (ED) Utilization path under the Utilization tab, an additional data element, **ED Indicator**, is required in the Inpatient Discharge file to indicate that the inpatient stay began in the ED. There are different options for populating the values for the ED Indicator element. Some Inpatient Discharge files will contain the “Point of Origin” field with a value of “7” representing an ED visit that resulted in admission to the hospital. Beginning in July 2010, the National Uniform Billing Committee (NUBC) removed the option of emergency room as a response to “Point of Origin” and instead uses a Condition Code value of “P7.” The condition code field alone, however, may not be reliable to determine if the hospital stay began in the ED. You may also use additional fields, such as line item detailed charges, revenue codes, and procedure codes to verify the value for the **ED Indicator** data element. The values for this data element can be set to 1 or 0 to represent stays that

began in ED or not, respectively. This data element must be supplied with the inpatient discharge data and is required in order to generate ED Utilization reports.

Evidence of ED services may include:

- Emergency department revenue code of 450-459 on record
- Positive emergency department charge, when revenue center codes are not available
- Condition Code of P7 (NUBC preferred coding for public reporting as of July 1, 2010)
- Point of origin of ED (NUBC preferred coding from October 1, 2007 to June 30, 2010)
- Admission source of ED (NUBC preferred coding prior to October 1, 2007)

Please review [Tables 18a](#) and 18b (located in [Appendix I](#)) to ensure that the local inpatient discharge data are mapped correctly. If possible, you may consider preparing the local dataset in advance by using names and codes that match those in MONAHRQ so that the software will automatically recognize data element names and value codes.

When preparing local inpatient discharge data, you will not need to create “dummy” data elements or to fill in missing values. The input file may contain extra data that are not required in MONAHRQ. Any data elements that are not used will not be imported. However, there is a **limit of 200 data elements in the inpatient discharge file; only the first 200 MONAHRQ data elements will be imported**. Any MONAHRQ data elements beyond the 200 count will not be imported. To ensure all of the necessary MONAHRQ data elements are imported, sort the order of data elements in the local inpatient discharge data file so that the needed data elements appear within the first 200 columns.

## Emergency Department Data

MONAHRQ uses emergency department (ED) data that provide patient demographics, hospital information such as trauma designation and region, diagnosis codes, payer(s), and information about the patient disposition upon release for ED visits that do not result in admission to the same hospital. These data are used to populate the part of the ED subpath under the Utilization path. The reports under the ED Utilization path use data from both the local inpatient discharge file and the ED treat-and-release file. These data files are connected by a common identifier, **Hospital\_ID**.

The local ED treat-and-release data file should be in one of three common applications or formats for use within MONAHRQ:

- Text (comma-separated values [CSV])
- Microsoft Access database
- Microsoft Excel spreadsheet

Two key formatting issues are:

- Each row of data represents a separate ED treat-and-release record.
- Each column of data represents a single data element for all ED treat-and-release visits.

Please review [Tables 18a](#) and 18b (located in [Appendix I](#)) to ensure that the local data are coded correctly. You may consider preparing the local dataset in advance by using names and codes that match those in MONAHRQ so that the software will automatically recognize data element names and value codes.



When preparing the local ED treat-and-release data, you will not need to create “dummy” data elements or to fill in missing values. The input file may contain extra data that are not required in MONAHRQ. Any data elements that are not used will not be imported, and therefore do not need to be removed. However, there is a **limit of 200 data elements in the ED treat-and-release file; only the first 200 MONAHRQ data elements will be imported**, and any MONAHRQ data elements beyond the 200 count will not be imported. To ensure all of the necessary MONAHRQ data elements are imported, you may sort the order of data elements in the local inpatient discharge data file so that the needed data elements appear within the first 200 columns.

MONAHRQ processes one **calendar year** of data at a time. Use MONAHRQ’s “point and click” process for mapping the local data elements and value codes to MONAHRQ.

### **Medicare Provider Charge Data: Inpatient**

MONAHRQ supports reporting capabilities using the Medicare Provider Charge Data: Inpatient file. This file is publically available in CSV format and includes hospital-specific charges for more than 3,000 U.S. hospitals. The hospitals provided in the Medicare Provider Charge data may only represent a subset of the total number of hospitals in your database

A recent copy of the Medicare Provider Charge Data: Inpatient file formatted to be compatible with MONAHRQ is available on the MONAHRQ data website ([http://monahrq.ahrq.gov/monahrq\\_data.shtml](http://monahrq.ahrq.gov/monahrq_data.shtml)). It is important to use the version posted on the MONAHRQ data website specific to the MONAHRQ version of interest because structural alterations have been made to the original Medicare Provider Charge Data: Inpatient files to ensure compatibility with MONAHRQ. The downloaded file can be uploaded directly to MONAHRQ without making any adjustments.

### **Measures**

#### **CMS Hospital Compare Measures**

MONAHRQ supports reporting capabilities using the CMS Hospital Compare database. CMS currently reports these data on the Hospital Compare website (<http://www.hospitalcompare.hhs.gov/>) and makes them publicly available. The CMS Hospital Compare measures provide information on performance ratings for hospitals.

You can find recent copies of the CMS Hospital Compare database formatted to be compatible with MONAHRQ on the MONAHRQ data website ([http://monahrq.ahrq.gov/monahrq\\_data.shtml](http://monahrq.ahrq.gov/monahrq_data.shtml)). It is important to use the version posted on the MONAHRQ data website specific to the MONAHRQ version of interest because structural alterations have been made to the original Hospital Compare files to ensure compatibility with MONAHRQ.

The CMS Hospital Compare measures report on topics such as heart attack, heart failure, pneumonia, surgical care, and imaging. To learn more about the CMS Hospital Compare measures, visit the Hospital Compare website at <http://www.hospitalcompare.hhs.gov/>.

#### **AHRQ Quality Indicators™**

The AHRQ Quality Indicators™ (QIs) use inpatient discharge data to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time. The AHRQ QIs are comprised of the Prevention Quality Indicators (PQIs), Inpatient Quality Indicators (IQIs), Patient Safety Indicators (PSIs), and Pediatric Quality Indicators (PDIs) (results of the first three modules are reportable

in MONAHRQ). More information about the AHRQ QIs, including technical specifications and analytic methods, can be found at <http://www.qualityindicators.ahrq.gov/>.

For MONAHRQ 5.0, AHRQ QIs must be calculated separately and the results imported into MONAHRQ. To do this, AHRQ provides Windows® and SAS® versions of the AHRQ QI software. Reports generated from the AHRQ QI software for Windows (WinQI) can be loaded directly into MONAHRQ. Reports generated from the AHRQ QI software for SAS require additional formatting for use with MONAHRQ. Information and instructions for preparing data using the AHRQ QI software for Windows or for SAS can be found in [Appendix J](#).

## Other Files

### Region Information File

MONAHRQ supports searching and reporting data at the intrastate regional level. The Host User may define regions, with specific hospitals assigned to each region, in order to reflect the unique geography of the area. A CSV file format can be used to load customized regions into MONAHRQ. The CSV file must have three fields on each line (see [Table 14](#)), in addition to a header row to ensure readability. The fields in the file must be in the following order: (1) a number that is the region ID; (2) the region name, which must be enclosed in double quotes if commas appear in this field; and (3) the two-letter State code.

**Table 14: Region Information File Format**

Field Name	Description	Notes
REGION_ID	Numeric region identifier	Required field
REGION_NAME	Region name	Required field
STATE	Two-letter State identifier	Required field

An example region file is shown below:

#### **RegionID,RegionName,State**

```
1,NorthEast,MD
2,Central,MD
3,South,MD
4,NorthWest,MD
5,MidCentral,MD
```

### Hospital Information File

MONAHRQ provides the ability to customize how hospital information is displayed. It allows you to associate regions with hospitals for reporting purposes (see [Table 15](#)). You may load hospital data from a previously created external file or a file exported from MONAHRQ. The file maps the hospital identifier in the data to hospital demographic data. The file should contain a header row, and while the titles in the header row are ignored, the order of the fields in the file must be consistent. The external CSV file must list the fields in this order: (1) Hospital ID; (2) Federal Information Processing Standards (FIPS) State-county code; (3) hospital name; (4) ZIP Code; (5) cost-to-charge ratio (if desired); (6) region (if desired); and (7) CMS provider ID (if desired).

If the hospital names contain commas, the names must be enclosed in double quotes. For the FIPS State-county codes, MONAHRQ will automatically determine the correct county and region using the



Dartmouth Atlas Hospital Service Areas (HSAs). If the regions have been customized as described above, the region ID associated with each hospital must match one of the newly customized region IDs.

**Table 15: Hospital Information File Format**

Field Name	Description	Notes
HOSPITAL_ID	Hospital identifier	Required field
FIPS	FIPS State-county code	Not required, but must contain a value. MONAHRQ will determine the correct county and region from the Dartmouth Atlas HSAs.
HOSPITAL_NAME	Hospital name for display	Required field. The name can be masked using the Mask Hospital Names button.
ZIP	ZIP Code	Required field
CCR	Cost-to-charge ratio	Not required, but field must be present.
REGION	Region identifier specified in the Define Regions step described above	Not required, but field must be present.
CMS_PROVIDER	CMS Provider ID	Not required, but field must be present.

An example hospital file is shown below:

```

DSHOSPID,FIPS,Name,ZIP,CCR,REGION,CMS_Provdr_Num
123477,24005,Facility 46,21201,0.8,3,210001
123475,24005,Facility 34,21133,0.8,3,210002
123494,24003,Facility 2,21401,0.8,4,210003
123464,24033,Facility 36,20785,1,1,210004
123456,24017,Facility 10,20646,1,1,210005
123504,24045,Facility 21,21804,1,5,210006

```

## APPENDIX G: MONAHRQ® SUPPLEMENTAL FILES

There are several supplemental data files embedded in MONAHRQ. [Table 16](#) provides a summary of these files, explains how the files are used in the software, and includes links for additional information.

**Table 16: MONAHRQ Supplemental Files**

File	Where Used in MONAHRQ-Generated Website	Purpose	Source
Cost-to-charge ratio files	Hospital Utilization—Avoidable Hospital Stays	Estimate hospital costs based on charges.	AHRQ Healthcare Cost and Utilization project (HCUP) ( <a href="http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp">http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp</a> )
Provider of Services (POS) file	Hospitals Database	Pre-loads hospitals for your state(s) in MONAHRQ and used for constructing the Hospital Profile page.	<a href="http://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/NonIdentifiableDataFiles/ProviderofServicesFile.html">http://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/NonIdentifiableDataFiles/ProviderofServicesFile.html</a>
Diagnosis Related Groups (DRG)	Hospital Utilization, County Rates	Assign Medicare Severity DRG (MS-DRG) and Major Diagnostic Category (MDC) groupings to each hospital discharge record. DRG and MS-DRG groupings are assigned based on discharge date.	Innovative Resources for Payors (IRP) DRG Grouper (through Fiscal Year 2011)
Census population data	Avoidable Hospital Stays, County Rates	Provide denominators for area-level calculations.	Included in the AHRQ QI software for Windows; originally obtained by AHRQ from the U.S. Census Bureau ( <a href="http://www.census.gov/popest/data">http://www.census.gov/popest/data</a> )
Map Shape Files	Avoidable Hospital Stays, County Rates	Provides Census boundary files for mapping software	Obtained from the U.S. Census Bureau (2010 files used; <a href="http://www.census.gov/geo/www/cob/index.html">http://www.census.gov/geo/www/cob/index.html</a> )
Benchmarks for AHRQ QIs	Hospital Quality Ratings	Provide two types of precalculated benchmarks for the AHRQ QIs: <ul style="list-style-type: none"> <li>• Nationwide</li> <li>• U.S. Census regions (Northeast, Midwest, South, West)</li> </ul>	Included in the AHRQ QI software for Windows; originally calculated by AHRQ using 2009 Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS)) ( <a href="http://www.hcup-us.ahrq.gov/">http://www.hcup-us.ahrq.gov/</a> ). For more information refer to: <a href="http://www.qualityindicators.ahrq.gov/FAQs_Support/FAQ_QI_Overview.aspx#benchmarkdata">http://www.qualityindicators.ahrq.gov/FAQs_Support/FAQ_QI_Overview.aspx#benchmarkdata</a>

File	Where Used in MONAHRQ-Generated Website	Purpose	Source
Benchmarks for hospital utilization and county rates	Hospital Utilization, County Rates	Provide two types of precalculated regional and national benchmarks for hospital and county rates and utilization: <ul style="list-style-type: none"> <li>• Nationwide</li> <li>• U.S. Census regions (Northeast, Midwest, South, West)</li> </ul>	Calculated by AHRQ using Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS), and Nationwide Emergency Department Sample (NEDS) data ( <a href="http://www.hcup-us.ahrq.gov/">http://www.hcup-us.ahrq.gov/</a> ).
Dartmouth Atlas Hospital Referral Region (HRR) and Hospital Service Area (HSA) files	Hospital Quality Ratings, Hospital Utilization	Map hospitals to HRR or HSA regions. These are optionally used in the website to select hospitals by region.	Dartmouth Atlas HRR and HSA files ( <a href="http://www.dartmouthatlas.org/">http://www.dartmouthatlas.org/</a> ).
MS-DRG, Clinical Classifications Software (CCS) Label and MDC Label Files	Hospital Utilization, County Rates	Group ICD–9–CM diagnosis and procedure codes into meaningful clinical categories. These are used in the website to select conditions or procedures.	HCUP ( <a href="http://hcup-us.ahrq.gov/">http://hcup-us.ahrq.gov/</a> )

## APPENDIX H: MONAHRQ® DATA ELEMENT MAPPING FOR INPATIENT DISCHARGE DATA

[Tables 17a–17g](#) below are the data dictionary for Inpatient Discharge Data.

**Table 17a: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Required for MONAHRQ Basic Functions**

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Age	AGE	Age in years at admission	Required	If this data element is missing, the discharge record will not be loaded and the data import process will not complete.	Source value	Numeric. Convert to years; if age <365 days, set value to 0. If data element does not exist, it should be calculated from Admission Date and Date of Birth.
Sex	SEX	Sex of patient: male/female	Required	If this data element is missing, the discharge record will not be loaded and the data import process will not complete.	1: Male 2: Female <Exclude from dataset>	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric value (1, 2) or excluded during data load.
Hospital ID	HOSPID	Data source hospital number	Required	Data element used to facilitate data exploration and reporting at the hospital-level. If this data element is missing, the discharge record will not be loaded and the data import process will not complete.	Source value	No data preparation needed. Source values, alpha or numeric, accepted.
Discharge Year	YEAR	Calendar year of patient's discharge	Required	Data element used to apply the proper fiscal year coding (e.g., ICD–9–CM, CPT) and to assign the MS-DRG Grouper version used. If this data element is missing, the discharge record will not be loaded	Source value, YYYY	Numeric: YYYY Discharge year should be within the range of 1997 to present year.

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
				and the data import process will not complete.		
Discharge Quarter	DQTR	Calendar quarter of the patient's discharge	Required	Data element used to apply the proper fiscal year coding (e.g., ICD-9-CM, CPT) and to assign the MS-DRG Grouper version used.  If this data element is missing, the discharge record will be not be loaded and the data import process will not complete.	1: January–March 2: April–June 3: July–September 4: October–December	If data element does not exist, it should be calculated from discharge date. Value must be numeric (1, 2, 3, 4) with no leading alpha characters.
Principal/Primary Diagnosis	DX1	ICD-9-CM diagnosis codes, without decimal points	Required	If this data element is missing, the discharge record will be not be loaded and the data import process will not complete.	Source value.  String value more than five characters will be shortened.	Diagnosis Code 1 is the principal/primary diagnosis.  Decimal points, if any, must be removed before loading data. Do not remove leading or trailing zeros. Similarly, you should not include additional digits when they are not required. Diagnosis codes are always 3, 4, or 5 characters long. For example, a diagnosis code of 005.89 would be input as 00589.

**Table 17b: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Required for MONAHRQ-Embedded MDC, DRG, and CCS Assignment**

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Diagnosis Code, 2–35	DX2–DX24	ICD–9–CM diagnosis codes, without decimal points	Required—if available	Used in assigning MDC, DRG, and Clinical Classifications Software (CCS). Required for preparing precalculated AHRQ QI rates.  Only a primary diagnosis is required at a minimum. Tertiary diagnoses are optional.	Source value.  String value more than five characters will be shortened.	Diagnosis Codes 2–35 are secondary diagnoses and would include any External Cause of Injury codes (E-codes).  Decimal points, if any, must be removed before loading data. Do not remove leading or trailing zeros. Similarly, you should not include additional digits when these are not required. Diagnosis codes are always 3, 4, or 5 characters long. Secondary diagnosis codes may include External Cause of Injury codes (E-codes).
Principal Procedure	PR1	ICD–9–CM procedure codes without decimals	Required	Used in assigning MDC, DRG, and CCS. Required for preparing pre-calculated AHRQ QIs rates.	Source value.  String value more than four characters will be shortened.	Procedure Code 1 is the principal procedure.  As with diagnosis codes, you should remove any decimal points; retain leading or trailing zeros; do not include additional digits when these are not required. Procedure codes are always 3 or 4 characters.
Procedure Code, 2–30	PR2–PR24	ICD–9–CM procedure codes without decimals	Required—if available	Used in assigning MDC, DRG, and CCS. Required for preparing precalculated AHRQ QI rates.  Only a principal procedure is required. Tertiary procedures are optional.	Source value.  String value more than four characters will be shortened.	Procedure Codes 2–30 are secondary procedures.  As with diagnosis codes, you should remove any decimal points and retain leading or trailing zeros; do not include additional digits when these are not required. Procedure codes are always 3 or 4 characters.

**Table 17c: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Required for Generating ED Utilization Subpath**

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
*ED Services	N/A	Hospital admission or ED treat-and-release	Required if ED utilization subpath is being generated	None	0: Records that do not include evidence of ED services 1: ED visits that result in admission to the hospital 9: Missing	This element needs to be created in the data file (see the paragraph below for details). Source values, alpha or numeric, will be mapped to accepted numeric value or excluded during data load.  This field may be derived from revenue codes on the admission claim. Stays with evidence of admission through the ED will carry a revenue code 45x.

**Table 17d: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Optional: Allows Host User to Import Own DRG and MDC**

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
DRG Import	DRG	User-defined Diagnosis Related Group (DRG)	Optional	The embedded Innovative Resources for Payors (IRP) Grouper will assign DRG codes in effect on discharge date (year and quarter).  If this field is missing, the embedded DRG Grouper will complete this data.		No error checking will be performed on the imported DRG values. If a DRG is assigned, an MDC must also be assigned.  MS-DRGs are assigned using the principal diagnosis and additional diagnoses, the principal procedure and additional procedures, sex and discharge status.

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
MDC Import	MDC	User-defined Major Diagnostic Category (MDC)	Optional	<p>This field is optional. If not populated, the embedded MDC grouper will complete this data.</p> <p>The embedded IRP Grouper will assign MDC value in effect on discharge date (year and quarter).</p>		No error checking will be performed on the imported MDC values. If an MDC is assigned, a DRG must also be assigned.

**Table 17e: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Optional: Supports Additional MONAHRQ Functions**

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Length of Stay	LOS	Number of days from admission to discharge	Optional	Statistics by length of stay will be excluded if this data element is missing.	Source value	Calculate if needed, from discharge data and admission date. Same-day stay should be set to 0.



MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Patient State/County Code	HOSPSTCO/ PSTCO	FIPS State/county code of patient's residence	Optional	<p>If this data element is missing, the discharge record will be excluded from area rate calculations and the Website wizard cannot create maps by showing rates of preventable hospitalization by area. We recommend analyzing the area rates at the State or metro-area level. Otherwise, patients who reside outside the same county as the hospital will be included in the numerator but not the denominator. The larger the geographic unit of analysis, the less likely it is that this situation will occur.</p> <p>If patient codes are not available, the hospital's codes can be loaded.</p> <p>If the hospital FIPS codes are used instead of the patient FIPS codes, the area rates must be interpreted with caution.</p>	Source value	<p>We recommend using the patient FIPS State/county code. The Federal Information Processing Standard (FIPS) codes may be obtained at <a href="http://www.census.gov/popest/about/geo/codes.html">http://www.census.gov/popest/about/geo/codes.html</a>.</p>

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/ Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Race	RACE	Race/ ethnicity of patient	Optional	Records with this data element missing will be retained and the value set to "Other."  The rates and utilization paths will not be stratified by race/ethnicity if the data element is completely missing.	1: White 2: Black 3: Hispanic 4: Asian or Pacific Islander 5: Native American 6: Other 0: Missing 99: Retain value <Exclude from dataset >	Source values, alpha or numeric, can be mapped to accepted numeric value (0–6, 99) or excluded during data value mapping.
Total Charge	TOTCHG	Total charge associated with hospital stay	Optional	This data element is optional, but if missing it will not include any cost column in any of the analysis. This results in incomplete reports in the generated website. If this data element is not available, costs and charges will be excluded from the Utilization path/Inpatient Hospital Utilization subpath, cost will be excluded from the County Rates path, and, cost savings associated with reducing the level of potentially avoidable hospitalizations will not be included in summary report.	Source value.  Must be an integer (i.e., whole numbers only).	Must be an integer: remove dollar signs and decimals (i.e., whole numbers only).

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/ Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Age in Days	AGEDAY	Age in days at admission (coded only when the age in years is less than 1)	Optional	Used in the inclusion and exclusion criteria for indicators addressing neonates or neonatal conditions and in the Pediatric Quality Indicators (PDI 16 and PDI 18). If this data element is missing (and age is 0), generally, an alternative specification applies.	Age in days only applies for age <1 year. If value is greater than 365, it will be changed to "Missing."	Numeric: 0–364
Admission Type	ATYPE	Admission type	Optional	Used in the inclusion and exclusion criteria for several PSIs and PDIs. For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	1: Emergency 2: Urgent 3: Elective 4: Newborn 5: Trauma center 6: Other 0: Missing <Exclude from dataset>	No data preparation needed.  If loading discharge data into MONAHRQ, source values, alpha or numeric, will be mapped to accepted numeric values (0–6) or excluded during data load.

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Admission Source	ASOURCE	Admission source	Optional	Used in the inclusion and exclusion criteria for several PQIs, PDIs, PSIs, and IQIs. These indicators include: PQI: 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 IQI: 32 PSI: 3 PDI: 2, 14, 15, 16, 17, 18 For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	1: Emergency room 2: Another hospital 3: Another health facility, including long-term care 4: Court/law enforcement 5: Routine/birth/other 0: Missing	No data preparation needed. If loading discharge data into MONAHRQ, source values, alpha or numeric, will be mapped to accepted numeric values (0–5) or excluded during data load.  Note: Admission Source uses HCUP uniform coding, which is a collapsed version of the UB-92 specifications, effective through September 2007. The UB-92 Admission Source codes must be mapped to HCUP uniform categories.  This field is also used to establish the ED Services flag.

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/ Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Point of Origin	POINTOFORIGIN04	Original source of admission	Optional	Used in the inclusion and exclusion criteria for several PQIs, PSIs, and IQIs. For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	When Admission Type is not "newborn": 1: Non-Health Care Facility 2: Clinic or Physician's Office 4: Transfer from a Hospital 5: Transfer from a Nursing Facility 6: Transfer from Another Health Care Facility 7: Emergency Room 8: Court/Law Enforcement 11: Transfer from Another Home Health Agency 12: Readmission to Same Home Health Agency 13: Transfer from One Distinct Unit to Another Unit in Same Hospital 14: Transfer from Ambulatory Surgery Center 15: Transfer from Hospice When Admission Type is "newborn": 5: Born inside this Hospital 6: Born outside of this Hospital	No data preparation needed.  If loading discharge data into MONAHRQ, source values, alpha or numeric, will be mapped to accepted numeric values (0–8, 11–15) or excluded during data load.  Note: Point of Origin coding matches the UB-04 specifications, effective beginning October 2007.

<b>MONAHRQ Data Element Name</b>	<b>Supported Data Element Names</b>	<b>Description</b>	<b>Required/ Optional</b>	<b>Impact of Exclusion on Data Import and Generated Website</b>	<b>Default Element Coding</b>	<b>Data Preparation</b>
Birthweight in Grams	BIRTHWEIGHT	Birthweight for newborns	Optional	Optional data element that is passed directly to the APR-DRG Grouper in the AHRQ QI software. If this data element is not available, value will be set to default in the grouper software. This field is not used as stratification criteria; ICD-9-CM diagnosis codes are used to indicate birthweight.	Source value	If value greater is than 7,000, value will be changed to “Missing” because higher values are considered invalid birthweights.
Days on Mechanical Ventilator	DMV	Number of days the patient spent on a mechanical ventilator	Optional	Optional data element is passed directly to the APR-DRG Grouper in the AHRQ QI software. If this data element is not available, value will be set to default in the grouper software.	Source value	No data preparation needed.

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/ Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Discharge Disposition	DISP	Disposition of patient	Optional	Used in the inclusion and exclusion criteria for several PQIs, PDIs, PSIs, and IQIs. For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	1: Routine 2: Short-term hospital 3: Skilled nursing facility 4: Intermediate care 5: Another type of facility 6: Home health care 7: Against medical advice 20: Died in the hospital 0: Missing 99: Discharged alive, destination unknown <Exclude from dataset>	No data preparation needed. If loading discharge data into MONAHRQ, source values, alpha or numeric, will be mapped to accepted numeric values (0–7, 20, 99) or excluded during data load.  Note: Discharge Disposition uses HCUP uniform coding, which is a collapsed version of the UB-04 (or UB-92) specifications. The UB Discharge Disposition codes must be mapped to HCUP uniform categories.
Custom Stratifier, 1–3	CUSTOM1-3	Custom stratification values	Optional	Custom stratifiers can be used in the reports section of the software (e.g., stratify by type of hospital—teaching or non-teaching). This data element has no effect on the generated HTML pages.		May be used with the AHRQ QI software for Windows.

**Table 17f: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Optional: Not Recommended For Use (For Patient Identification With External Analysis)**

<b>MONAHRQ Data Element Name</b>	<b>Supported Data Element Names</b>	<b>Description</b>	<b>Required/Optional</b>	<b>Impact of Exclusion on Data Import and Generated Website</b>	<b>Default Element Coding</b>	<b>Data Preparation</b>
Key	KEY	Unique case identifier	Optional	If this data element is not available, you cannot link the discharge records in the Patient-Level Report back to the input data file.	Source value	Maximum length: 20 characters
Admission Date	ADMIT_DATE	Date of patient admission for identification purposes only	Optional	None	It is recommended that you DO NOT USE this field unless required for external analysis	MM/DD/YYYY
Date of Birth	BIRTH_DATE	Patient date of birth for identification purposes only	Optional	None	It is recommended that you DO NOT USE this field unless required for external analysis	MM/DD/YYYY
Discharge Date	DISCHARGE_DATE	Date of patient discharge for identification purposes only	Optional	None	It is recommended that you DO NOT USE this field unless required for external analysis	MM/DD/YYYY



MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
Patient ID	PATIENT_ID	Patient ID or medical record number for identification purposes only	Optional	None	It is recommended that you DO NOT USE this field unless required for external analysis.	No data preparation needed.
PAY1	PAY1	Expected primary payer, uniform	Optional	Statistics by payer will be excluded if this data element is missing. Records with this data element missing will be retained and the value set to "Other."	1: Medicare 2: Medicaid 3: Private/HMO (Health Maintenance Organization) 4: Self-Pay 5: No Charge 6: Other 0: Missing 99: Retain Value	Source values, alpha or numeric, can be mapped to accepted numeric value (0–6, 99) or excluded during data value mapping.

**Table 17g: Preparing Your Local Inpatient Discharge Data: Data Element Mapping—Optional: Not Recommended For Use (For Custom Region Reports)**

<b>MONAHRQ Data Element Name</b>	<b>Supported Data Element Names</b>	<b>Description</b>	<b>Required/Optional</b>	<b>Impact of Exclusion on Data Import and Generated Website</b>	<b>Default Element Coding</b>	<b>Data Preparation</b>
HRR	HRR	HRR Region ID	Optional, required for HRR region reporting	If the data element is missing, the HRR reports cannot be completed	It is recommended that you DO NOT USE this field unless you are generating HRR region reports	Numeric, 6 characters
HSA	HSA	HSA Region ID	Optional, required for HSA region reporting	If the data element is missing, the HSA reports cannot be completed	It is recommended that you DO NOT USE this field unless you are generating HSA region reports	Numeric, 6 characters
Patient Region ID	PATIENT_REGION_ID	Patient Region identifier	Required for Custom Regions reporting	If the data element is missing, the custom region reports cannot be completed	It is recommended that you DO NOT USE this field unless you are generating custom region reports	Numeric, 6 characters
ZIP	ZIP	ZIP Code value in Region	Required for custom regions reporting	If the data element is missing, the custom regions report cannot be generated	It is recommended that you DO NOT USE this field unless generating custom region reports	Numeric, 5 characters

## APPENDIX I: MONAHRQ® DATA ELEMENT MAPPING FOR EMERGENCY DEPARTMENT TREAT-AND-RELEASE DATA

**Table 18a: Preparing Your Local Emergency Department Treat-and-Release Data: Data Element Mapping—Required for MONAHRQ Basic Functions**

MONAHRQ Data Element Name	Supported Data Element Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
AGE	AGE	Patient age at time of service	Required	If this data element is missing, the discharge record will not be loaded.	Source value	Numeric. Convert to years; if age <365 days, set value to 0. If variable does not exist, it should be calculated from Admission Date and Date of Birth.
DISP_ED	DISP_ED	Disposition Code	Required	If this data element is missing, the discharge record will not be loaded.	1: Routine 2: Transfer to short-term hospital 5: Transfer other: includes Skilled Nursing Facility (SNF), Intermediate Care Facility (ICF), and another type of facility 6: Home Health Care (HHC) 7: Against medical advice (AMA) 20: Died in ED 21: Discharged/transferred to court/law enforcement 98: Not admitted to this hospital, destination unknown 99: Not admitted to this hospital, discharged alive, destination unknown, Missing	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric value or excluded during data load. The standard UB-04 claim record contains a “Disposition Code” field which may be used to perform this mapping.

<b>MONAHRQ Data Element Name</b>	<b>Supported Data Element Names</b>	<b>Description</b>	<b>Required/ Optional</b>	<b>Impact of Exclusion on Data Import and Generated Website</b>	<b>Default Element Coding</b>	<b>Data Preparation</b>
DX1	DX1	Primary ICD–9 Diagnosis	Required	If this data element is missing, the discharge record will not be loaded.	Source value; string value more than five characters will be shortened.	Diagnosis Code 1 is the first- listed diagnosis. Decimal points, if any, must be removed before loading data. Do not remove leading or trailing zeros. Similarly, you should not include additional digits when they are not required. Diagnosis codes are always 3, 4, or 5 characters long. For example, a diagnosis code of 005.89 would be input as 00589.
SEX	GENDER	Indicator of sex	Required	If this data element is missing, the discharge record will not be loaded.	1: Male 2: Female	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric value (1, 2) or excluded during data load.
HOSPITAL_ ID	HOSPITAL_ ID	Hospital identifier	Required	If this data element is missing, the discharge record will not be loaded.	Source value	No data preparation needed. Source values, alpha or numeric, accepted.

**Table 18b: Preparing Your Local Emergency Department Treat-and-Release Data: Data Element Mapping—Optional for MONAHRQ Basic Functions**

MONAHRQ Data Element Name	Supported Data Elements Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
DX2-DXn	DX2-DX20 or, DXCSS2-20	2nd ICD–9 Diagnosis	Optional	None	Source value; string value more than five characters will be shortened.	Diagnosis Codes 2–35 are secondary diagnoses, and would include any External Cause of Injury codes (E-codes). While up to 35 diagnosis codes are available, in practice only 18 including the primary diagnosis would be coded. Decimal points, if any, must be removed before loading data. Do not remove leading or trailing zeros. Similarly, you should not include additional digits when they are not required. Diagnosis codes are always 3, 4, or 5 characters long. Secondary diagnosis codes may include External Cause of Injury codes (E-codes).
KEY_ED	KEY_ED	Visit level record identifier (primary key)	Optional	If this data element is not available, users cannot link the discharge records in the Patient-Level Report back to the input data file.	Source value	No data preparation needed.
NDX	NDX	Number of diagnoses on this discharge	Optional	None	Calculated value	No data preparation needed. This element will be used for future reporting flexibility.

MONAHRQ Data Element Name	Supported Data Elements Names	Description	Required/ Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
PAY1	PAY1	Expected primary payer, uniform	Optional	Statistics by payer will be excluded if this data element is missing. Records with this data element missing will be retained and the value set to "Other."	1: Medicare 2: Medicaid 3: Private/HMO (Health Maintenance Organization) 4: Self-Pay 5: No Charge 6: Other 0: Missing 99: Retain Value	Source values, alpha or numeric, can be mapped to accepted numeric value (0–6, 99) or excluded during data value mapping.
RACE	RACE	Race	Optional	Records with this data element missing will be retained and the value set to "Other." The rates and utilization paths will not be stratified by race/ethnicity if the data element is completely missing.	1: White 2: Black 3: Hispanic 4: Asian or Pacific Islander 5: Native American 6: Other 0: Missing 99: Retain value	Source values, alpha or numeric, can be mapped to accepted numeric value (0–6, 99) or excluded during data value mapping.

MONAHRQ Data Element Name	Supported Data Elements Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
COUNTY	COUNTY	Hospital modified FIPS State/county code	Optional	If this data element is missing, the discharge record will be excluded from area rate calculations and the Website wizard cannot create maps by showing rates of preventable hospitalization by area. We recommend analyzing the area rates at the State or metro-area level. Otherwise, patients who reside outside the same county as the hospital will be included in the numerator but not the denominator. The larger the geographic unit of analysis, the less likely it is that this situation will occur. If patient codes are not available, the hospital's codes can be loaded. If the hospital FIPS codes are used instead of the patient FIPS codes, the area rates must be interpreted with caution.	Source value	We recommend using the patient FIPS State/county code. The Federal Information Processing Standard (FIPS) codes may be obtained at <a href="http://www.census.gov/popest/about/geo/codes.html">http://www.census.gov/popest/about/geo/codes.html</a> .

MONAHRQ Data Element Name	Supported Data Elements Names	Description	Required/Optional	Impact of Exclusion on Data Import and Generated Website	Default Element Coding	Data Preparation
HOSP_TRAUMA	HOSP_TRAUMA	Hospital trauma level designation	Optional	None. This data element is not currently utilized, but added here to be used in the future version of MONAHRQ.	0: Not a trauma center 1: Level 1 2: Level 2 3: Level 3 8: Level 1 or 2 9: Level 1, 2, or 3	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric value or excluded during data load. This element will be used for future reporting flexibility.
YEAR	YEAR	Admission year	Required	Data element used to apply the proper fiscal year coding (e.g., ICD-9-CM, CPT). Discharge year should be within the range of 1997 to present year. If this data element is missing, the discharge record will be not be loaded.	Source value, YYYY	Numeric: YYYY. Discharge year should be within the range of 1997 to present year.



## APPENDIX J: PREPARING DATA USING THE AHRQ QUALITY INDICATORS™ SOFTWARE FOR WINDOWS® AND SAS®

MONAHRQ® can import externally calculated AHRQ Quality Indicator (QI) measure results. The results must be calculated using AHRQ QI software and supplied using a specific file format (see specified file formats in [Table 19](#), [Table 20](#), and [Table 21](#)). The AHRQ QI software runs statistical analysis on local inpatient discharge data to calculate the measure results. Detailed instructions for running the software can be found at: <http://qualityindicators.ahrq.gov/software/default.aspx>.

The AHRQ QI software is provided in Windows (see more information under [Part 1](#)) and SAS versions (see more information under [Part 2](#)). Each version calculates the AHRQ QI rates.

### Part 1: Using the AHRQ QI Software for Windows®

When running the AHRQ QI software for Windows (WinQI), the following reports provide measure results in the correct format:

- Provider-level reports
- Area-level reports
- Provider-level composite measure reports

When running the AHRQ QI software for Windows, the following set of reports is provided for each separate module: Inpatient Quality Indicators (IQIs), Patient Safety Indicators (PSIs), Prevention Quality Indicators (PQIs), and Pediatric Quality Indicators Overview (PDIs). The available sets of reports for each module are as follows:

- IQI—Provider, Area, and Composite
- PSI—Provider, Area, and Composite
- PQI—Area
- PDI—Provider (for PSI-17), Area (for PQI-09).

The provider-level and composite measure reports provide data for the Hospital Quality path of MONAHRQ. The area-level report provides data for the Avoidable Hospital Stays path of MONAHRQ. Composite measure data at the area level are included within the area-level reports.

**NOTE:** If you wish to use the *cost savings estimate* feature of the Avoidable Hospital Stays path, it is **very important that you include “total charges” in your discharge data** when you import it into the AHRQ QI software for Windows. Because “total charges” is not a standard field used by the AHRQ QI software, you must map this field to the “Custom Stratifier 1” field, which is a character field in the AHRQ QI software. Thus, when preparing your discharge data, you must represent the total charges for each discharge as a whole or decimal number that can be stored in a character field.

By default, MONAHRQ reports results for the following AHRQ QI modules: Inpatient Quality Indicators (IQIs), Patient Safety Indicators (PSIs), and Prevention Quality Indicators (PQIs). For more information, see the Measure List ([http://monahrq.ahrq.gov/MONAHRQ\\_50\\_Measure\\_List.xlsx](http://monahrq.ahrq.gov/MONAHRQ_50_Measure_List.xlsx)), an easy-to-reference spreadsheet listing all of the measures available in MONAHRQ 5.0.

### **Provider-Level and Composite Measures**

You may obtain data for provider-level measures through the AHRQ QI provider reports. To generate the appropriate report, follow the steps below:

**Step 1:** Select the Provider Report wizard within the AHRQ QI application.

**Step 2:** Select the indicators to use. As mentioned, MONAHRQ supports the IQIs and PSIs for provider-level reporting.

**Step 3:** After selecting your desired measures, on subsequent screens select the hospitals to include, along with the date range for reporting.

**Step 4:** On the screen titled “Select Stratifiers for Use with Provider Indicators,” drag the Hospital ID from the right hand list of stratifiers over to the box on the left (if it is not already present). Hospital ID should be selected by default. MONAHRQ supports only stratification by Hospital ID for provider-level measures.

**Step 5:** The next screen ([Screenshot 124](#)) will provide you with the option to select composite measures and update their weighting.

**Step 6:** The final screen titled “Additional Options for Data Analysis” allows for the selection of more report options. Under the Report Layout section of the screen, select the options “Show Indicators in Rows” and “Include Title in Exported Files” to ensure that the report will be saved in a format that can be read by MONAHRQ.

[Screenshot 124](#) shows the appropriate options to select.

## Screenshot 124: AHRQ QI Software Analysis Options for Provider-Level Reports

The screenshot shows the 'Additional Options' window for AHRQ Quality Indicators. The window has a title bar 'Additional Options' and a logo 'AHRQ Quality Indicators'. On the left is a 'Wizard Screens' sidebar with links: 'Select Content', 'Record Selection', '2. Select Hospitals', '3. Select Date Range', 'Rates and Totals', '4. Select Provider Stratifiers', '5. Select Composite', '6. Additional Options' (highlighted), 'Generate Report', '7. Generate Report', 'View Reports', and '8. View Report'. The main area is titled 'Additional Options For Data Analysis' and contains several sections:

- Rates:** A list of checkboxes: ☒ Observed Rates, ☒ Expected Rates, ☒ Observed/Expected (OE) Ratio, ☒ Reference Population Rate, ☒ Risk Adjusted Rates, ☒ Smoothed Rates, ☐ 90%, ☒ 95%, ☒ Report confidence intervals, ☒ Include Indicator Totals, and ☒ Use POA in rate calculation.
- Scaling:** ☒ Display Raw Rates, ☐ Scale To Outcomes Per: 100 (dropdown), and Number of Decimals: 6 (dropdown).
- Report Layout:** ☒ Show Indicators In Rows, ☐ Show Indicators In Columns, ☒ Include Title in Exported Files, and ☐ Show Names of Indicators.
- Cell Suppression:** ☐ Exclude results that are based on too few patients? Minimum patients per cell: 20 (text box).
- Geography Stratifiers:** ☒ Show Numeric FIPS Codes, ☐ Show the names of each county, state or metro area.
- Area Report Options:** ☒ Include only the population of counties with discharge records, ☐ Use the total population of each state or metro area, and ☐ Risk adjust for SES poverty decile.
- Report Title:** A text box containing 'Report from 5/15/2012 11:10:15 AM'.

At the bottom are buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

Selecting **Next** on the screen will run the report ([Screenshot 124](#)). MONAHRQ relies on the file format from the AHRQ QIs to import calculated measure results. The file format is documented below in [Table 19](#).

## Screenshot 125: AHRQ QI Software Provider-Level Report

**Reports**

**AHRQ** quality indicators

Report  
Report from 5/15/2012 11:10:15 AM

Source Data: ...NAHRQTestData\MONAHRQ\_40  
Date Created: 5/15/2012 11:34:05 AM Rows in Report: 787  
Rates Per: case

Controls  
Select Report: Provider  
Rows Per Page: 50000  
[Show Indicator Definitions Window](#)  
Select cells then use <Ctrl>-C to copy

Indicator	Hospital ID	Observed Numerator	Observed Denominator	Observed Rate	Expected Rate	O/E Ratio	Reference Pop. Rate
IQI 19	128	0	5	0.000000	0.008856	0.000000	0.025824
IQI 19	129	1	5	0.200000	0.043914	4.554333	0.025824
IQI 19	130	0	3	0.000000	0.008682	0.000000	0.025824
IQI 19	131	2	6	0.333333	0.028057	11.880588	0.025824
IQI 19	132	1	4	0.250000	0.010294	24.285227	0.025824
IQI 19	133	0	1	0.000000	0.006334	0.000000	0.025824
IQI 19	134	0	4	0.000000	0.039887	0.000000	0.025824
IQI 19	135	0	3	0.000000	0.010332	0.000000	0.025824
IQI 19	136	0	7	0.000000	0.014477	0.000000	0.025824
IQI 19	137	0	2	0.000000	0.015020	0.000000	0.025824
IQI 19	138	0	1	0.000000	0.007267	0.000000	0.025824
IQI 19	139	0	4	0.000000	0.018562	0.000000	0.025824
IQI 19	140	0	5	0.000000	0.008451	0.000000	0.025824
IQI 19	141	1	2	0.500000	0.089685	5.575082	0.025824
IQI 19	142	0	6	0.000000	0.013270	0.000000	0.025824
IQI 19	TOTAL	7	150	0.046667	0.020355	2.292692	0.025824
IQI 20	101	0	24	0.000000	0.031894	0.000000	0.036602
IQI 20	102	0	19	0.000000	0.027708	0.000000	0.036602
IQI 20	103	1	22	0.045455	0.052213	0.870554	0.036602
IQI 20	104	1	25	0.040000	0.028436	1.406680	0.036602
IQI 20	105	1	36	0.027778	0.040220	0.690641	0.036602

Export All Composites Page 1 of 1 < PreviousPage Next Page > Close Help

Select the **Export All** button, as seen in [Screenshot 125](#), and save the results to a file.

**Table 19: Provider-Level Indicator Input File Format**

Field Name	Description	Sequence
Module	Measure module such as IQI, PSI	1
Indicator Number	Measure identifier code	2
Hospital ID	Provider identifier	3
Observed Numerator	Numerator	4
Observed Denominator	Denominator	5
Observed Rate	Observed rate	6
Observed Conf Int. Low	Lower bound of the observed rate confidence interval	7
Observed Conf Int. High	Upper bound of the observed rate confidence interval	8
Expected Rate	Expected rate	9

Field Name	Description	Sequence
O-E Ratio	Ratio of the observed and expected rates	10
Reference Pop Rate	Rate for reference population	11
Risk Adjusted Rate	Risk adjusted rate	12
Risk Adj Conf Int. Low	Lower bound of the risk adjusted rate confidence interval	13
Risk Adj Conf Int. High	Upper bound of the risk adjusted rate confidence interval	14
Smoothed Rate	Smoothed rate	15

## Composite Measures

The composite measure report is generated by selecting the **Composites** button at the bottom of the Provider-Level Report Results screen ([Screenshot 126](#)).

### Screenshot 126: AHRQ QI Software Provider-Level Report—Composite Selection

The screenshot displays the AHRQ Quality Indicators software interface. At the top, the 'Reports' window title is visible. Below the title bar, the 'AHRQ Quality Indicators' logo is shown. The main area is divided into two sections: 'Report' and 'Controls'.

**Report Section:**

- Report from:** 5/15/2012 11:10:15 AM
- Source Data:** ...NAHRQ\TestData\MONAHRQ\_40
- Date Created:** 5/15/2012 11:34:05 AM
- Rows in Report:** 787
- Rates Per:** case

**Controls Section:**

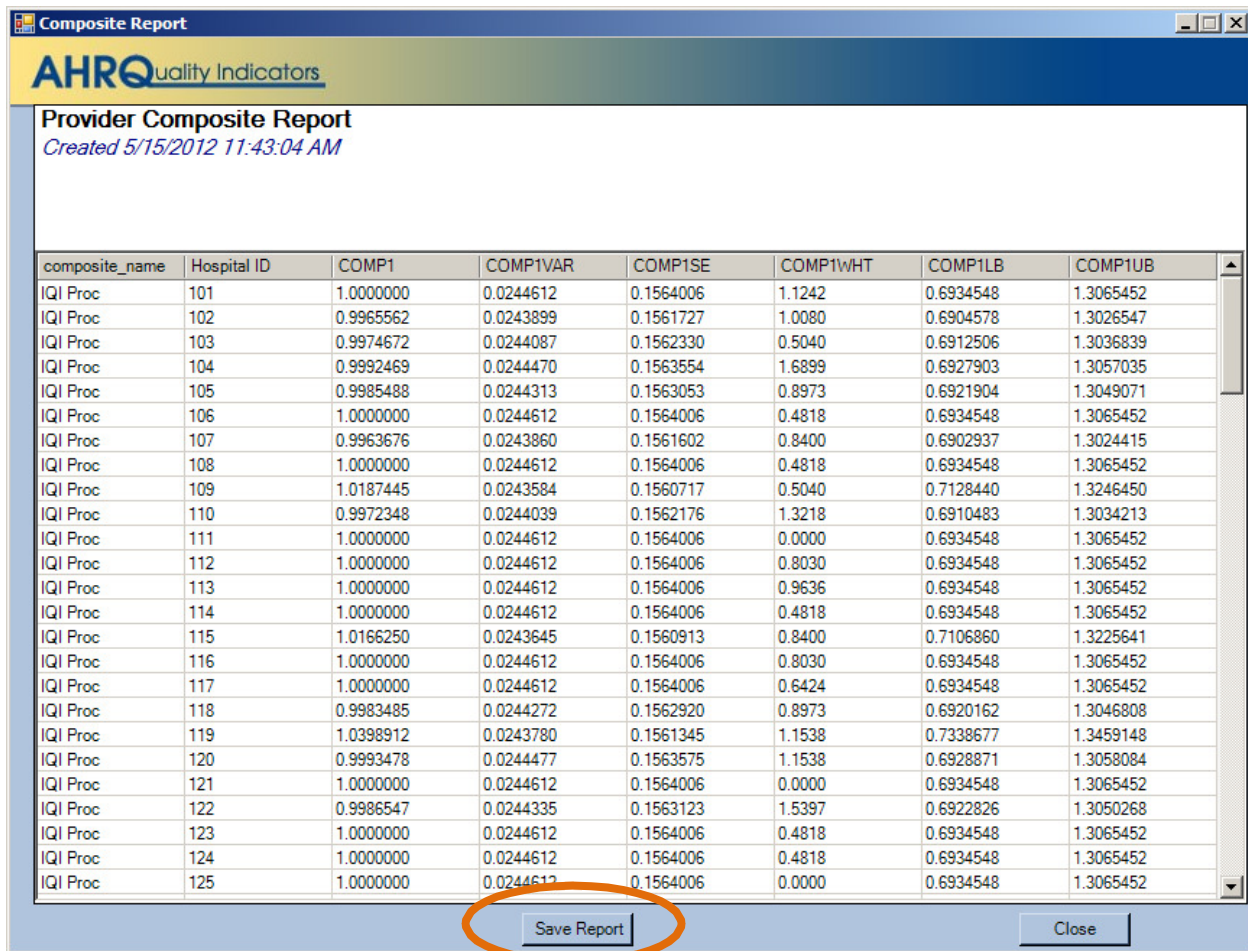
- Select Report:** Provider (dropdown menu)
- Rows Per Page:** 50000 (dropdown menu)
- [Show Indicator Definitions Window](#)
- Select cells then use <Ctrl>-C to copy

The main data table displays the following columns: Indicator, Hospital ID, Observed Numerator, Observed Denominator, Observed Rate, Expected Rate, O/E Ratio, and Reference Pop. Rate. The table lists data for various hospitals (e.g., 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142) and a 'TOTAL' row for IQI 19. It also includes data for IQI 20 (e.g., 101, 102, 103, 104, 105).

At the bottom of the window, there is a navigation bar with the following buttons: Export All, **Composites** (circled in orange), Page 1 of 1, < PreviousPage, Next Page >, Close, and Help.



## Screenshot 127: AHRQ QI Software Composite Report



composite_name	Hospital ID	COMP1	COMP1VAR	COMP1SE	COMP1WHT	COMP1LB	COMP1UB
IQI Proc	101	1.0000000	0.0244612	0.1564006	1.1242	0.6934548	1.3065452
IQI Proc	102	0.9965562	0.0243899	0.1561727	1.0080	0.6904578	1.3026547
IQI Proc	103	0.9974672	0.0244087	0.1562330	0.5040	0.6912506	1.3036839
IQI Proc	104	0.9992469	0.0244470	0.1563554	1.6899	0.6927903	1.3057035
IQI Proc	105	0.9985488	0.0244313	0.1563053	0.8973	0.6921904	1.3049071
IQI Proc	106	1.0000000	0.0244612	0.1564006	0.4818	0.6934548	1.3065452
IQI Proc	107	0.9963676	0.0243860	0.1561602	0.8400	0.6902937	1.3024415
IQI Proc	108	1.0000000	0.0244612	0.1564006	0.4818	0.6934548	1.3065452
IQI Proc	109	1.0187445	0.0243584	0.1560717	0.5040	0.7128440	1.3246450
IQI Proc	110	0.9972348	0.0244039	0.1562176	1.3218	0.6910483	1.3034213
IQI Proc	111	1.0000000	0.0244612	0.1564006	0.0000	0.6934548	1.3065452
IQI Proc	112	1.0000000	0.0244612	0.1564006	0.8030	0.6934548	1.3065452
IQI Proc	113	1.0000000	0.0244612	0.1564006	0.9636	0.6934548	1.3065452
IQI Proc	114	1.0000000	0.0244612	0.1564006	0.4818	0.6934548	1.3065452
IQI Proc	115	1.0166250	0.0243645	0.1560913	0.8400	0.7106860	1.3225641
IQI Proc	116	1.0000000	0.0244612	0.1564006	0.8030	0.6934548	1.3065452
IQI Proc	117	1.0000000	0.0244612	0.1564006	0.6424	0.6934548	1.3065452
IQI Proc	118	0.9983485	0.0244272	0.1562920	0.8973	0.6920162	1.3046808
IQI Proc	119	1.0398912	0.0243780	0.1561345	1.1538	0.7338677	1.3459148
IQI Proc	120	0.9993478	0.0244477	0.1563575	1.1538	0.6928871	1.3058084
IQI Proc	121	1.0000000	0.0244612	0.1564006	0.0000	0.6934548	1.3065452
IQI Proc	122	0.9986547	0.0244335	0.1563123	1.5397	0.6922826	1.3050268
IQI Proc	123	1.0000000	0.0244612	0.1564006	0.4818	0.6934548	1.3065452
IQI Proc	124	1.0000000	0.0244612	0.1564006	0.4818	0.6934548	1.3065452
IQI Proc	125	1.0000000	0.0244612	0.1564006	0.0000	0.6934548	1.3065452

Select the **Save Report** button to generate the composite provider-level report ([Screenshot 127](#)).

MONAHRQ accepts the file format generated by the AHRQ QI Software. The file format is documented in [Table 20](#).

**Table 20: Composite Indicator Input File Format**

Field Name	Description	Sequence
composite_name	Measure name	1
Hospital ID	Provider identifier	2
COMP1	Composite rate/ratio	4
COMP1SE	Standard error	5
COMP1WHT	Weight	6
COMP1LIB	Lower bound of the rate/ratio confidence interval	7
COMP1UB	Upper bound of the rate/ratio confidence interval	8

## Area-Level Measures

Data for area-level measures is obtained through the AHRQ QI area reports. To generate the appropriate reports, follow the steps below:

1. Select the Area Report Wizard within the AHRQ QI application ([Screenshot 128](#)).
2. After choosing the desired measures, select the desired hospitals and date range for reporting on the subsequent screen.
3. On the screen titled “Select Stratifiers For Use With Area Indicators,” drag “County” from the right hand list of stratifiers over to the box on the left (if it is not already present). “County” should be selected by default. MONAHRQ supports only stratification by county for area-level measures.
4. The final screen titled **Additional Options for Data Analysis** allows for the selection of more report options. Under the **Report Layout** section of the screen, select the options **Show Indicators in Rows** and **Include Title in Exported Files** to ensure that the report will be saved in a format that can be read by MONAHRQ.

With MONAHRQ 5.0, the total cost saving data calculation is embedded within MONAHRQ and you will not need to run the Cost Calculator to calculate total cost saving. Area-level QI files can be directly uploaded into MONAHRQ. However, MONAHRQ still requires reading information from the AHRQ QI database in order to calculate cost. More information about this is provided in [Appendix K: Area QI Cost Savings Calculation for Avoidable Hospital Stays Reports](#).

### Screenshot 128: AHRQ QI Software Analysis Options for Area-Level Reports

**Additional Options For Data Analysis**

**Rates**

- ☒ Observed Rates
- ☒ Expected Rates
- ☒ Observed/Expected (OE) Ratio
- ☒ Reference Population Rate
- ☒ Risk Adjusted Rates
- ☒ Smoothed Rates ☐ 90% ☒ 95%
- ☒ Report confidence intervals
- ☒ Include Indicator Totals

**Scaling**

- ☒ Display Raw Rates
- ☐ Scale To Outcomes Per:
- Number of Decimals:

**Report Layout**

- ☒ Show Indicators In Rows
- ☐ Show Indicators In Columns
- ☒ Include Title in Exported Files
- ☐ Show Names of Indicators

**Cell Suppression**

- ☐ Exclude results that are based on too few patients?
- Minimum patients per cell:

**Geography Stratifiers**

- ☒ Show Numeric FIPS Codes
- ☐ Show the names of each county, state or metro area

**Area Report Options**

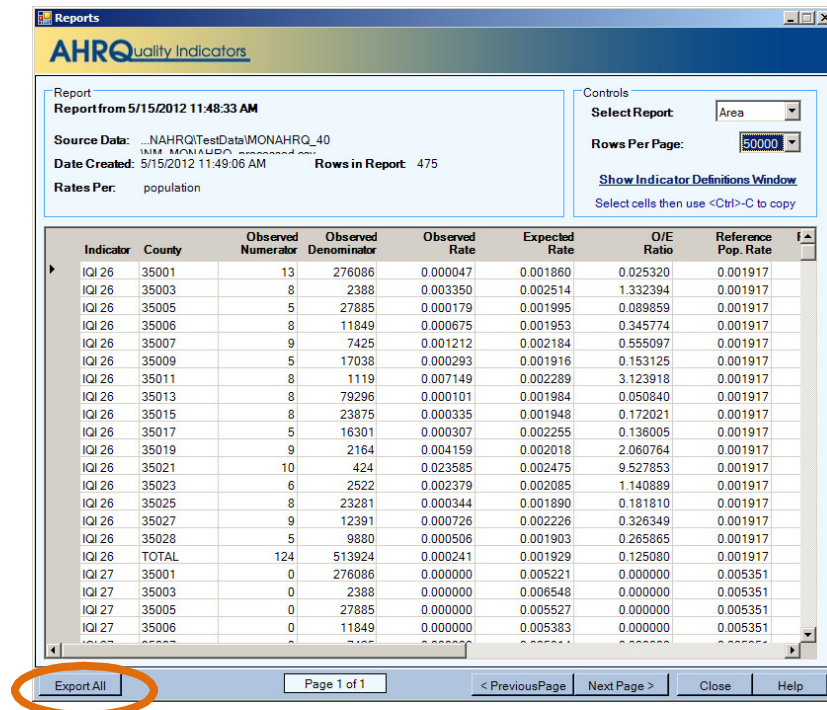
- ☒ Include only the population of counties with discharge records
- ☐ Use the total population of each state or metro area
- ☐ Risk adjust for SES poverty decile

**Report Title**

< Back Next > Cancel Help

[Screenshot 128](#) displays the default export setting for the AHRQ QI Area-Level Reports. Selecting **Next** as shown in [Screenshot 128](#) will run the report. MONAHRQ relies on the file format from the AHRQ QIs to import calculated measure results. The file format is documented below in [Table 21](#).

## Screenshot 129: AHRQ QI Software for Area-Level Reports



Select the **Export All** button to save the results in a comma-separated values (CSV) file ([Screenshot 129](#)).

MONAHRQ accepts the file format generated by the AHRQ QI Software. The file format is documented in [Table 21](#).

**Table 21: Area-Level Indicator Input File Format**

Field Name	Description	Sequence
Module	Measure module such as IQI, PSI	1
Indicator Number	Measure identifier code	2
County	Federal Information Processing Standard (FIPS) code	3
Observed Numerator	Numerator	4
Observed Denominator	Denominator	5
Observed Rate	Observed rate	6
Observed Conf Int. Low	Lower bound of the observed rate confidence interval	7
Observed Conf Int. High	Upper bound of the observed rate confidence interval	8
Expected Rate	Expected rate	9
O-E Ratio	Ratio of the observed and expected rates	10
Reference Pop Rate	Rate for reference population	11
Risk Adjusted Rate	Risk adjusted rate	12
Risk Adj Conf Int. Low	Lower bound of the risk adjusted rate confidence interval	13
Risk Adj Conf Int. High	Upper bound of the risk adjusted rate confidence interval	14
Smoothed Rate	Smoothed rate	15



## Part 2: Preparing Data Using the AHRQ QI Software for SAS®

MONAHRQ can display externally calculated quality measures from the AHRQ Quality Indicator (QI) software for SAS (SAS QI). The AHRQ QI results must be exported from the QI software using a specific file format. These file formats are described in detail in [Table 19](#), [Table 20](#), and [Table 21](#).

The AHRQ QI software for SAS software provides a set of reports for each separate module: Inpatient Quality Indicators (IQIs), Prevention Quality Indicators (PQIs), and Patient Safety Indicators (PSIs). Although MONAHRQ does not specifically support the Pediatric Quality Indicators (PDIs), two measures—Low Birth Weight Rate (PQI-09) and Injury to Neonate (PSI-17)—are calculated by the SAS QI software through the PDI module. The available sets of reports for each module are as follows:

- IQI—Provider, Area, and Composite
- PSI—Provider, Area, and Composite
- PQI—Area
- PDI—Provider (for PSI-17), Area (for PQI-09) (standalone SAS programs for PSI-17 and PQI-09 are available beginning in AHRQ QI version 4.5)

The software and documentation for the AHRQ SAS QIs can be found at:

<http://www.qualityindicators.ahrq.gov/software/SAS.aspx>

After running the desired AHRQ QI SAS modules using your inpatient hospital data, you will need to reformat the data for use with MONAHRQ.

Several SAS utilities have been developed to convert the output from the SAS QI software to a format suitable for MONAHRQ. There is a SAS formatting utility for each module and available sets of reports, and each SAS formatting utility is QI module-specific. For input, each requires the SAS output files produced by the AHRQ QI module. The SAS output files must be available as permanent SAS datasets—as opposed to temporary “work” datasets—including output from the Composite runs for the IQI and PSI modules. The utilities will format the SAS files into a CSV file that can then be loaded into MONAHRQ. The final CSV file is identical to those used to import data from the AHRQ QI software.

Currently, MONAHRQ supports these levels of reporting: overall and at the hospital-level for provider runs; overall and county- or State-level Federal Information Processing Standard (FIPS) code for area runs; and aggregate composite runs, as selected in the control file for the SAS “production” runs.

The following information describes the necessary steps to create the CSV files using the AHRQ QI SAS Modules.

### **IQI Module**

After completing the IQI module, download and modify the IQI-specific SAS Formatting Utilities for the AHRQ QIs from the **Resources** page of the MONAHRQ download website. The provider-, composite-, and area-level utility files for the IQIs are as follows:

1. IQI\_Prov\_V1\_1.SAS
1. IQI\_Comp\_V1\_1.SAS
2. IQI\_Area\_v1\_1.SAS

You must copy these utility files to the same production directory where the AHRQ IQI Module SAS jobs are stored. The SAS formatting utilities for the AHRQ IQIs depend on the IQI Module control file. You

must modify the section of code (provided below) in the IQI\_Prov\_V1\_1.SAS, IQI\_Comp\_V1\_1.SAS, and IQI\_Area\_V1\_1.SAS files in order for the SAS jobs to be able to use the IQI Module control file:

```
FILENAME CONTROL 'C:\PATHWAY \CONTROL_IQI.SAS'; *<===USER MUST modify;
```

Once the pathway has been assigned, run the three SAS formatting utilities for the AHRQ IQIs. They should produce three separate files in the production directory:

1. IQI\_Prov\_V1\_1\_IQI\_P3.csv
2. IQI\_Comp\_V1\_1\_IQI\_C3.csv
3. IQI\_Area\_V1\_1\_IQI\_A3.csv

All three files can be then be loaded into MONAHRQ.

### **PSI Module**

After completing the PSI module, download and modify the PSI-specific SAS Formatting Utilities for the AHRQ QIs from the **Resources** page of the MONAHRQ download website. The provider-, composite-, and area-level utility files for the PSIs are as follows:

1. PSI\_Prov\_V1\_1.SAS
2. PSI\_Comp\_V1\_1.SAS
3. PSI\_Area\_V1\_1.SAS

The utility files must be copied to the same production directory containing the AHRQ PSI Module SAS jobs. The SAS formatting utilities for the AHRQ PSIs depend on the PSI Module control file. You must modify the section of code (provided below) in the PSI\_Prov\_V1\_1.SAS, PSI\_Comp\_V1\_1.SAS, and PSI\_Area\_V1\_1.SAS files in order for the SAS jobs to be able to use the PSI Module control file:

```
FILENAME CONTROL 'C:\PATHWAY \CONTROL_PSI.SAS'; *<===USER MUST modify;
```

Once the pathway has been assigned, run the three SAS formatting utilities for the AHRQ PSIs. That process should produce three separate files in the production directory:

1. PSI\_Prov\_V1\_1\_PSI\_P3.csv
2. PSI\_Comp\_V1\_1\_PSI\_C3.csv
3. PSI\_Area\_V1\_1\_PSI\_a2.csv

All three files can be loaded into MONAHRQ.

### **PQI Module**

After completing the PQI module, download and modify the PQI-specific SAS Formatting Utilities for the AHRQ QIs from the **Resources** page of the MONAHRQ download website. The area-level utility file for the PQIs is—

1. PQI\_Area\_V1\_1.SAS

The utility file must be copied to the same production directory where the AHRQ PQI Module SAS jobs are stored. The SAS formatting utilities for the AHRQ PQIs depends on the PQI Module control file. You must modify the section of code (provided below) in the PQI\_Area\_V1\_1.SAS file in order for the SAS job to be able to use the PQI Module control file:

```
FILENAME CONTROL 'C:\PATHWAY \CONTROL_PQI.SAS'; *<===USER MUST modify;
```

If the Area QI Cost Calculator for SAS ([Appendix K](#)) has been run, you must specify the name of the modified rate file in the following section of PQI\_Area\_V1\_1.SAS:

```
*=====;
```

```
CHOOSE NAME OF INCOMING RATE FILE, WITH COST;*
```

```
OR THE STANDARD RATE FILE PRODUCED BY SASQI*
```

```
*=====;
```

```
%*let Ratefile_=pqa3_cost;      *<===USER MUST MODIFY, eg: pqa3 or pqa3_cost ;
```

```
%let Ratefile_=pqa3;      *<===USER MUST MODIFY, eg: pqa3 or pqa3_cost ;
```

Once the pathway has been assigned, run the SAS formatting utilities for the AHRQ PQIs. This should produce one file in the production directory:

1. PQI\_Area\_V1\_1\_PQI\_A3.csv

This file can be loaded into MONAHRQ.

### **PDI Module**

After completing the PDI module, download and modify the PDI-specific SAS Formatting Utilities for the AHRQ QIs from the **Resources** page of the MONAHRQ download website. The provider- and area-level utility files for the PDIs are as follows:

1. PDI\_Prov\_V1\_1.SAS
2. PDI\_Area\_V1\_1.SAS

The utility files must be copied to the same production directory containing the AHRQ PDI Module SAS jobs. The SAS formatting utilities for the AHRQ PDIs depend on the PDI Module control file. You must modify the section of code (provided below) in the PDI\_Prov\_V1\_1.SAS and PDI\_Area\_V1\_1.SAS files in order for the SAS jobs to be able to use the PDI Module control file:

```
FILENAME CONTROL 'C:\PATHWAY \CONTROL_PDI.SAS'; *<===USER MUST modify;
```

If the Area QI Cost Calculator for SAS ([Appendix K](#)) has been run, you must specify the name of the modified rate file in the following section of PDI\_Area\_V1\_1.SAS:

```
*=====*
```

CHOOSE NAME OF INCOMING RATE FILE, WITH COST; \*

OR THE STANDARD RATE FILE PRODUCED BY SASQI\*

```
*=====*
```

```
%*let Ratefile_=PDa3_cost;    *<===USER MAY MODIFY, eg: PDa3;
```

```
%let Ratefile_=PDa3;    *<===USER MAY MODIFY, eg: PDa3_cost;
```

Once the pathway has been assigned, run the two SAS formatting utilities for the AHRQ PDIs. This process should produce two separate files in the production directory:

1. PDI\_Prov\_V1\_1\_PDI\_P3.csv
2. PDI\_Area\_V1\_1\_PDI\_A3.csv

Both files can be loaded into MONAHRQ. Once all SAS formatting utilities for the AHRQ QIs have been used to create the desired CSV files, the CSV files are ready to be loaded into MONAHRQ under the Import AHRQ QI Data section.

## APPENDIX K: AREA QI COST SAVINGS CALCULATION FOR AVOIDABLE HOSPITAL STAYS REPORTS

To report the estimated cost savings for potentially avoidable hospital stays, MONAHRQ® needs to calculate the cost. This calculation occurs during the website publishing process only if the “Avoidable Hospital Stays” report checkbox is selected.

### Area-Level QI Report

The cost calculation process appends a total cost to the **AHRQ QI Area-Level Report** generated by the AHRQ QI software for Windows® and uploaded to MONAHRQ. Costs reflect the estimated costs to a hospital for services performed, while charges represent what the hospital billed for the inpatient stay. Total charges are converted to estimated costs using hospital-level cost-to-charge ratios based on hospital accounting reports from the CMS (AHRQ Healthcare Cost and Utilization project (HCUP) (<http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp>). The total cost is computed for each QI by aggregating Area-Level QI rates and summing costs by county.

If you choose to report Cost Savings in your MONAHRQ-generated website, **you must have the AHRQ QI software for Windows installed**. In order for MONAHRQ to calculate the total cost, you must have imported the total charge field into the AHRQ QI software as part of your inpatient discharge data and mapped it to the “Custom Stratifier 1” field, as described in [Appendix J](#).

### QI Database

During the installation of the AHRQ QI software for Windows, the installer builds the AHRQ QI database, which contains the discharge-level QI rates. Data are stored in SQL Server database format, with default file name “qualityindicators.” In order for MONAHRQ to assign costs to county-level QI rates, the Cost Calculator must read through the intermediate data in the AHRQ QI database, aggregate that data by QI, and sum costs by county.

### Hospital Information File

MONAHRQ requires the hospital-level cost-to-charge ratios to assign estimated total costs. Since the inpatient discharge data include charges rather than costs, MONAHRQ will use the out-of-the-box cost-to-charge ratios, or you can define custom values for your hospitals under the Datasets>Hospital Data tab. Instructions can be found in [Section 4.3.3](#), “Editing and Managing Hospital Attributes.”

### Cost Estimates Calculation

The cost is calculated in the background during the website publishing process. The session log provides a record of all logs that are related to the calculation run.

### Select Database

MONAHRQ will try to read AHRQ QI database information from your computer. If it does not find the information, it will ask you to provide the correct database information, as shown in [Screenshot 130](#). To do so, follow the steps below:

1. Enter the SQL Server database connection information for the QI database (server name, authentication type, database name). If the AHRQ QI software for Windows was run on the same machine, no changes are required to the default information.

2. Click the **Test** button to perform a consistency check on the database. The following tests are performed:
  - The database must contain a “discharge\_main” table, which must contain *HOSPID* and *Custom1* fields, and must contain flag fields for each QI in the input area QI file.
  - The “discharge\_main” table must contain records with non-null values of *HOSPID*.
  - The *Custom1* field must not contain non-numeric values other than null or blank.
3. Once you have entered the file information, select **Connect** to continue. This will complete the calculation process. If the calculation process encounters errors, it will prompt you to either cancel the page generation process or continue without calculating the cost ([Screenshot 130](#)). If you choose to continue upon receiving the error, the cost savings reports will not be generated. Any errors encountered by the cost calculation process will also be available in the session log. This will help you or your IT support personnel identify any errors or problems with cost calculation.

### Screenshot 130: Enter Location of QI Database (SQL Format)

The screenshot shows the Monahrq application interface. On the left is a sidebar with icons for Libraries, DATA SETS, MEASURES, REPORTS, WEBSITES, and SETTINGS. The main window has a title bar 'Monahrq - Input your data. Output your website.' and a navigation bar with 'Welcome', 'Session Log', and 'About'. Below the navigation bar are two tabs: 'Database Connection' and 'Other Connections'. The 'Other Connections' tab is active, displaying a form titled 'Other Connections'. The form contains the following fields and controls:

- A text area for 'Connection Name' with a dropdown arrow.
- A 'SAVE' button (green) and a 'CANCEL' button (red) to the right of the 'Connection Name' field.
- A 'Server Name (example: .\SQLEXPRESS)' field.
- An 'Authentication Type:' section with two radio buttons: 'SQL Server' (unselected) and 'Integrated security' (selected).
- A 'Database Name (example: MONAHRQ\_50)' field.
- A 'CLOSE' button (blue) at the bottom center of the dialog.

At the bottom right of the application window, the text 'Monahrq Version 5.0.0.0' and the 'AHRQ' logo are visible.

### Technical Notes About Calculation of Total Costs by MONAHRQ®

The resulting file will contain a total cost for each QI aggregated by county, for which there are one or more records in the “discharge\_main” table with the QI indicator flag set. As each record of the QI input file is read, cost is calculated and added to the record.

For *discharge-level* rows, if the observed numerator is missing, the cost is missing. If the observed numerator is zero, the cost is zero. If the observed numerator is not missing or zero (0), and no records with the QI flag set for the county have a non-missing (discharge-level) cost, then the cost is missing. Otherwise, mean cost is calculated as total cost divided by the number of records with non-missing costs, rounded to the nearest dollars and cents. Cost is calculated as mean cost times the observed numerator.

For the *total* rows for each QI, if the observed numerator is missing, the cost is missing. If the observed numerator is zero, the cost is zero. Otherwise, total cost and the total records with non-missing cost are aggregated over counties. If the total number of records with non-missing cost is 0, cost is missing. If the total number of records with non-missing cost is not zero, mean cost is calculated as total cost divided by the total number of records with non-missing cost rounded to the nearest cents. Cost is calculated as mean cost times the observed numerator.

Errors are reported if the cost could not be calculated for any record on the file or if lines are too short to contain the observed numerator. You will receive a warning if there are records for which cost is missing.

## **APPENDIX L: CELL SIZE SUPPRESSION IN MONAHRQ®**

"Cell size suppression" refers to how MONAHRQ handles small numbers of records available for computing rates. A simple rate is comprised of a numerator divided by a denominator. MONAHRQ offers flexibility in customizing suppression related to the denominator and numerator of a rate per measure.

Denominator-based suppression is generally used to ensure a sufficient number of cases for reliability. Numerator-based suppression is generally used to protect privacy. MONAHRQ provides the ability to suppress values based on a denominator threshold, a numerator threshold, or both. Denominator-based suppression takes precedence over numerator-based suppression. If the margin suppression option is checked, the system will apply margin suppression instead of numerator-based suppression. The cell size suppression logic for MONAHRQ is as follows:

### **Denominator-Based Suppression**

If the denominator is below the specified denominator threshold, denominator-based suppression applies.

- Rates will be suppressed and displayed as dashes ('-')
- Numerator values will be suppressed and displayed as dashes ('-')
- Denominator values will be suppressed and displayed as dashes ('-')

Note: If denominator-based suppression applies, numerator-based suppression logic (described below) is not checked.

### **Numerator-Based Suppression**

If the numerator is below the specified numerator threshold AND denominator-based suppression does not apply, numerator-based suppression applies.

- Rates will be suppressed and displayed as "c"
- Numerator value will be suppressed and displayed as "c"
- Denominator values will be shown

Note: For measures that do not have a denominator (blank), only numerator-based suppression applies.

### **Margin Suppression**

MONAHRQ supports margin suppression as an optional numerator-related rule. Margin refers to how close the numerator is to the denominator. Margin suppression is triggered when the difference between the denominator and the numerator is below the numerator suppression threshold. For example, assume that the numerator suppression threshold is set at five. If the numerator equals 96 and the denominator equals 100, margin suppression applies.

- Rates will be suppressed and displayed as "c"
- Numerator values will be suppressed and displayed as "c"
- Denominator values will be shown



## APPENDIX M: SIGNING UP FOR GOOGLE ANALYTICS

To use the free resources available from Google Analytics, follow these steps:

### **Step 1: Sign up for an account.**

Visit the Google Analytics website (<http://www.google.com/analytics/>) to sign up for a new account. Click the *Create an Account* button and follow the on-screen instructions.

### **Step 2: Set up account properties.**

Google Analytics is flexible and can support different account configurations. Your setup affects how data appear in your reports from Google Analytics. To help plan your setup, refer to the articles in Google's overview of accounts, users, properties, and profiles

(<http://support.google.com/analytics/bin/topic.py?topic=1102143>).

### **Step 3: Set up your tracking code.**

Create a tracking ID in your Google Analytics account by following the process outlined in the Google Analytics support documents (<http://support.google.com/analytics/bin/answer.py?answer=1008080>). Include the Google Analytics tracking ID and code in your MONAHRQ-generated website in order to collect and send usage data to your Google Analytics account. You can track multiple websites in the same account, but every website must have its own tracking ID and be set up individually in Google Analytics. The web tracking can be set up in your Google Analytics account.

## APPENDIX N: GLOSSARY

The following acronyms and terms are used throughout this guide.

ACO:	Accountable Care Organization
AMA:	Against medical advice
CCR:	Cost-to-charge ratio
CCS:	Clinical Classifications Software
CMS:	Centers for Medicare & Medicaid Services
CSV:	Comma-separated values
CVEs:	Chartered Value Exchanges
Data file:	Input files containing health care data that are imported into MONAHRQ for generating reports.
DRG:	Diagnosis Related Group
E-codes:	External cause of injury codes
ED:	Emergency Department
End User:	A person who accesses a website report generated by MONAHRQ.
FIPS:	Federal Information Processing Standards
HCAHPS:	Hospital Consumer Assessment of Healthcare Providers and Systems
HCUP:	Healthcare Cost and Utilization Project
HHC:	Home health care
HMO:	Health maintenance organization
Host User:	An organization or individual that downloads MONAHRQ and uses it to generate a MONAHRQ website.
HRRs:	Dartmouth Atlas Hospital Referral Regions
HAS:	Dartmouth Atlas Hospital Service Area
ICF:	Intermediate care facility
IP:	Inpatient Hospital Discharge file
IPPS:	Inpatient Prospective Payment System
IQIs:	Inpatient Quality Indicators
IRP:	Innovative Resources for Payors
IT:	Information technology
MDC:	Major Diagnosis Category
Measure description information:	Information about quality measures included in MONAHRQ that can be included in MONAHRQ-generated reports or web pages.
MONAHRQ:	The desktop software that a Host User downloads and uses to generate a website and/or related reports.
MONAHRQ data elements:	Standard name used by MONAHRQ to represent columns for a data file.

MONAHRQ download website:	The website that provides access to MONAHRQ software and data downloads as well as information about MONAHRQ. It can be found at <a href="http://monahrq.ahrq.gov">http://monahrq.ahrq.gov</a> .
MONAHRQ-generated website:	A website that a Host User creates using MONAHRQ.
MS-DRG:	Medicare Severity Diagnosis Related Group
NEDS:	Nationwide Emergency Department Sample
NIS:	Nationwide Inpatient Sample
NQF:	National Quality Forum
NUBC:	National Uniform Billing Committee
PDIs:	Pediatric Quality Indicators
POA:	Present on admission
POS:	Provider of Services
PQIs:	Prevention Quality Indicators
PSIs:	Patient Safety Indicators
QI:	Quality Indicator
QIOs:	Quality Improvement Organizations
RHIOs:	Regional Health Improvement Organizations
SNF:	Skilled nursing facility

## APPENDIX O: DEPENDENCY CHECKS - ERRORS AND WARNINGS

The following table lists Errors and Warnings generated in MONANHRQ and recommends a resolution path.

**Table 22: Dependency Checks - Errors and Warnings**

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Data	No geographic regions are defined for the Hospitals	No regions are defined for your website. The region based grouping and filters will not be available to your website	Warning	Provide regions data via the Hospital Data>Geographic Regions tab.
Data	Check dataset mapping	To generate Utilization County Rates report, Patient State/County Code must be mapped during the Inpatient Discharge data import.	Warning	Map the data element, "Patient State/County Code" during the Inpatient Discharge data set import.
Data	Inpatient Discharge data set	The data element "ED Services" flag in your Inpatient Hospital discharge data file is not found or set to null. Please add or populate the ED Services data element or the Emergency Department Report will be generated with inaccurate or incomplete data.	Error	Map the data element, "ED Services" during the Inpatient Discharge data set import.
Data	Regions	Custom regions and/or population data files have not been imported. Population Region Rates report will not be generated.	Error	Import both custom region and population region files in the Hospital Data>Geographic Regions tab.
Data	Regions	No population data files have been imported. The Rate of Discharge column will not be generated.	Warning	Import the custom population region file in the Hospital Data>Geographic Regions tab.
Data	Regions	Population region file has been imported but the custom region is missing. All the reports aggregated by the custom regions will not be generated.	Warning	Import the custom region file in the Hospital Data>Geographic Regions tab.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Data	Regions	You have selected Population Region Rates report that requires you to define regions in your Inpatient Discharge (IP) file. You need to define your regions in the IP data file and map these regions in the Hospital Data section. The Population Region Rates report will not be generated.	Warning	Include the Region ID columns (HRR, HSA and Custom) in the Inpatient Discharge data set and map them accordingly during Data Mapping. To bypass this warning, unselect the Region Rates Reports from the website.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals. Otherwise the costs for the hospitals will not be included in the Avoidable Stays Maps by County Profile Report.	Warning	Provide CCR data for all the hospitals to be included in the website. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals otherwise the costs for the hospitals will not be included in Avoidable Stays Maps by County Report.	Warning	Provide CCR data for all the hospitals to be included in the website. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Avoidable Stays Maps Report.	Warning	Provide CCR data for all the hospitals included in the website. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in County Rates Detail Report.	Warning	Provide CCR data for all the hospitals included in the website. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in County Rates Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Inpatient Hospital Discharge Utilization Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Inpatient Utilization Detail Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Region Rates Detail Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data->Hospitals tab or Website->Customized Site tab->Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Region Rates Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in County Rates Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Population Region Rates Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Inpatient Utilization Detail Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	Cost-to-charge ratio not defined	To generate Utilization and Cost Savings Reports, Cost-to-Charge-Ratios must be defined for all hospitals or else the cost for the hospitals will not be included in Inpatient Hospital Discharge Utilization Report.	Warning	Provide CCR data for all the hospitals included in the website generation. CCR values can be entered in Hospital Data>Hospitals tab or Website>Customized Site tab>Included Hospitals pop up screen.
Reports	CMS Provider ID	You have selected "AHRQ-QI Provider Data" report that require you to map all hospitals in your QI files with correct CMS provider ID. If you leave it unmapped, the QI measures will not appear in the generated reports.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "AHRQ-QI Composite Data" report that require you to map all hospitals in your QI files with correct CMS provider ID. If you leave it unmapped, the QI measures will not appear in the generated reports.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.



Area	Check Type	Dependencies Check message	Error Type	How to Fix
Reports	CMS Provider ID	You have selected "County Rates Detail Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "County Rates Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "Region Rates Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "Region Rates Detail Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Reports	CMS Provider ID	You have selected "Inpatient Hospital Discharge Utilization Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "Inpatient Utilization Detail Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "Emergency Department Treat and Release Utilization Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.
Reports	CMS Provider ID	You have selected "ED Utilization Detailed Report" report that require you to map all hospitals in your inpatient discharge file with correct CMS provider IDs. If you leave it unmapped, these hospitals will not appear in the Utilization report.	Warning	Provide Local Hospital ID for all the hospitals included in the website generation. This provides the crosswalk between CMS Provider ID and your Local Hospital ID. Local Hospital ID can be entered in Hospital Data>Hospitals tab.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Report	Settings	To generate cost saving for Avoidable Stays report, verify you are connected to the AHRQ QI database in the Settings\Other Connection screen.	Warning	Connect to the WinQI database in the Settings>Other Connection screen.
Website	State is not selected	No State for the website is selected. The website cannot be generated.	Error	Select the state(s) in the Websites>Customize Site tab.
Website	Output Folder	The output folder you have selected doesn't exist. The website cannot be generated.	Error	Provide the output folder in the Websites>Customize Site tab.
Website	About Us content	No text for the About Us is provide. The generated website will show it as blank	Warning	Provide the contents in the About Us section in the Websites>Customize Site tab.
Website	Choose Data Sets	No data set is add. The website cannot be generated. Please add datasets under "Choose Data Sets" tab and click the Save button	Error	Select the data sets in the Websites>Choose Data Sets tab.
Website	Choose Data Sets	No Inpatient Hospital discharge data file is selected, which is needed to generate Emergency Department treat-and-release Reports. This will not create the Emergency Department reports.	Error	Select the Inpatient Discharge data set in the Websites>Choose Data Sets tab.
Website	Modify Measures	No measures for the Dataset,"{Data set name}" is selected. The corresponding report(s), will not be generated.	Warning	Select the measures in the Websites>Modify Measures tab for the reports they have selected in the Build Reports tab.
Website	Modify Measures	No measures are selected and the website cannot be generated	Error	Select the measures in the Websites>Modify Measures tab.

Area	Check Type	Dependencies Check message	Error Type	How to Fix
Website	Build Reports	No reports are selected and the website cannot be generated.	Error	Select the reports in the Websites>Build Reports tab.
Website	Build Reports	The collection year for your Inpatient Discharge data file does not match the website's year. You may prefer to continue with publishing the website, but check your Inpatient Discharge utilization reports for accuracy.	Warning	Select the same website year as your selected Inpatient Discharge data set in the Websites>Overview tab.
Website	Build Reports	The collection year for your Emergency Department treat-and-release data file does not match the website's year. You may prefer to continue with publishing the website, but check your Emergency Department utilization reports for accuracy.	Warning	Select the same website year as your selected ED data set in the Websites>Overview tab.
Website	Hospital Profile Report	You have selected Hospital Profile Report that require you to import Medicare Provider Charge Data as an option. This is to include the Utilization tab. Please import Medicare Provider data or uncheck Hospital Profile Report from Build Reports Tab.	Warning	Unselect the Hospital Profile Report in the Websites>Build Reports tab or import an select the Medicare Provider Charge Data in the Websites->Choose Data Sets tab.

## APPENDIX P: CUSTOM REGION POPULATION FILE - DATA DICTIONARY

**Table 23: Region Population Data Dictionary**

Filed Name	Data Type	Required?
REGION_ID	Numeric	Yes
SEX	Numeric	Yes
AGEGROUP	Numeric	Yes
RACE	Numeric	Yes
YEAR	Numeric	Yes
POPULATION	Numeric	Yes

**Table 24: Region Population file structure- Example**

REGIONID	SEX	AGEGROUP	RACE	YEAR	POPULATION
234	0	0	0	2013	80
234	1	0	0	2013	40
234	2	0	0	2013	40
234	0	1	0	2013	10
234	0	2	0	2013	20
234	0	3	0	2013	30
234	0	4	0	2013	20
234	0	0	1	2013	10
234	0	0	2	2013	10
234	0	0	3	2013	10
234	0	0	4	2013	10
234	0	0	5	2013	10
234	0	0	6	2013	30

**Table 25: Sex Lookup Table**

CATVAL	Name
0	All
1	Male
2	Female

**Table 26: Age group Lookup Table**

CATVAL	Name
0	All
1	<18
2	18-44
3	45-64
4	65+

**Table 27: Race Lookup Table**

CATVAL	Name
0	All
1	White
2	Black
3	Hispanic
4	Asian or Pacific Island
5	Native American
6	Other